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Investigation of Mafic–Ultramafic Intrusions in Ontario and Implications for Platinum Group Element Mineralization: Operation Treasure Hunt

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Investigation of Mafic–Ultramafic Intrusions in Ontario and Implications for Platinum Group Element Mineralization: Operation Treasure Hunt

by

C. Vaillancourt, R.A. Sproule, C.A. MacDonald and C.M. Lesher

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Abstract

This study of platinum group element (PGE) potential of mafic–ultramafic intrusions in Ontario, supported by Operation Treasure Hunt, was initiated to follow up on new discoveries of PGE occurrences in the province. This initiative represents a collaborative effort between the Ontario Geological Survey, the Geological Survey of Canada, and the Mineral Exploration Research Centre at Laurentian University.

Ontario comprises a diverse range of tectonic settings and contains a very large number of mafic–ultramafic and intermediate intrusions. The high potential for PGE deposits in Ontario is already proven by the Lac des Iles mine, one of three presently-operating primary PGE mines in the world. The purpose of this study is to develop a classification framework for mafic–ultramafic intrusions and PGE occurrences based on geochemistry of the host intrusion, mineralization styles, and tectonic setting, which may be used to help delineate areas where exploration should be focussed.

A diversity of PGE mineralization styles is observed in Ontario. Five major mineralization types were identified: (1) **Type I** stratiform contact; (2) **Type II** stratabound disseminated; (3) **Type III** stratiform reef-style; (4) **Type IV** hydrothermally-mobilized magmatic; and (5) **Type V** tectonically mobilized.

Several commonalties exist across Ontario:

- Similar observations have been made for Archean and Proterozoic mafic–ultramafic bodies that have similar characteristics. Therefore, the age of the body does not appear to be a significant criterion.

- Many deposits and significant occurrences are associated with tholeiitic intrusions. Focus should be set on those that are large or part of a large magmatic system.

- Alkalic and possibly calc-alkalic complexes in Ontario that are known to host significant PGE occurrences all appear to have a large proportion of mafic–ultramafic units relative to intermediate and felsic units. As for the tholeiitic intrusions, the larger complexes should be given priority.

- Types I and II mineralization in Ontario are associated with komatiitic, tholeiitic, calc-alkalic, or alkalic magmas.

- Exploration for Type III mineralization requires a thorough understanding of the geology of the intrusion, and closely-spaced geochemical sampling. Granitoid/gneiss terranes represent tectonically stable environments necessary to support and permit long-term crystallization in large mafic–ultramafic intrusions. Ontario contains many granitoid/gneiss terranes that have only been mapped at large scales. These areas have significant potential to host large mafic–ultramafic intrusions, which may contain Type III mineralization.

- Where Type IVa mineralization occurs, there seems to be a clear association of high Pd, Co, and Ni.

- Type IVc mineralization occurs in the Lac des Iles deposits. Although intrusions showing textural and compositional similarities with Lac des Iles were investigated throughout the province, it appears that only the intrusions located in proximity to Lac des Iles contain significant abundances of PGEs.

- Type V mineralization is typically associated with other types of mineralization and can therefore occur in any tectonic setting and in any type of intrusion.

Investigation of Mafic–Ultramafic Intrusions in Ontario and Implications for Platinum Group Element Mineralization: Operation Treasure Hunt

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Introduction

This Open File Report complements a GIS (Geographic Information System) and database product that was released on CD-ROM (Miscellaneous Release – Data 100) in March 2002 (Hulbert et al. 2002) and a database (Miscellaneous Release – Data 115) that was released on diskette in December 2002 (Vaillancourt et al. 2002). A study of platinum group element (PGE) potential of mafic–ultramafic[1] intrusions in Ontario was initiated in January 2001 to follow up on multiple new discoveries of PGE occurrences in the province. The project was part of the Operation Treasure Hunt (OTH) initiative, which was designed to stimulate exploration activities and attract mineral investment in Ontario. It represents a collaborative effort between the Ontario Geological Survey (OGS), the Geological Survey of Canada (GSC), and the Mineral Exploration Research Centre (MERC) at Laurentian University. The project has resulted in the development of a comprehensive database outlining critical geological information on mafic–ultramafic intrusions and PGE mineralization in Ontario and new lithogeochemical data for mafic–ultramafic intrusions across the province. This database provides a key framework to increase our understanding of PGE mineralization in mafic–ultramafic intrusions in Ontario.

The locations of the mafic–ultramafic bodies studied in this project are shown on a geological map of Ontario (Figure 1), which is located in the back pocket of the report. Specific locations for individual samples are provided in Appendix 1. The lithogeochemical data for the samples are given in Appendix 2 (major oxides) and Appendix 3 (trace elements). The data has also been released on a diskette as publication MRD 115 in December 2002, which also includes petrographic descriptions for each sample. Appendix 4 contains specific information on each intrusion, presented in ascending OTH numbers (listed on Figure 1).

The geology of Ontario consists of a diverse range of tectonic settings and a very large number of mafic–ultramafic and intermediate intrusions of various ages. The high potential for PGE deposits in Ontario is already proven by the Lac des Iles Mine, one of only three presently-operating PGE mines in the world. The purpose of this study is to develop a classification framework for mafic–ultramafic intrusions and PGE occurrences in Ontario based on lithogeochemistry of the host intrusion, mineralization styles, and tectonic setting, which may be used to help delineate areas where exploration should be focussed. To achieve these aims, 109 mafic–ultramafic and intermediate intrusions were sampled. Lithogeochemical and petrographic analyses were performed to aid in classifying the intrusions in terms of their magmatic affinities and potential for PGE mineralization.

Using a subdivision modified from the scheme developed for komatiite-associated Ni-Cu-PGE deposits by Lesher and Keays (2002), five major mineralization types have been identified:

1) **Type I** stratiform contact mineralization (e.g., Agnew, East Bull Lake, River Valley: Peck et al. 2001);

2) **Type II** strata-bound disseminated mineralization (e.g., Entwine Lake: Arnold et al. 2000);

3) **Type III** stratiform "reef-style" mineralization (e.g., Coldwell Complex: Allan MacTavish, Appinite Geological Consulting, personal communication, 2002);

4) **Type IV** hydrothermally-mobilized magmatic mineralization (e.g., Lac des Iles: Brügmann et al. 1989); and

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[1] As used in this report, the term "mafic–ultramafic" refers to intrusions composed of mafic rocks only, ultramafic rocks only, or a combination of mafic and ultramafic rocks.

5) **Type V** tectonically mobilized mineralization (e.g., Rathbun Lake: Rowell and Edgar 1986).

This classification scheme is described in detail later in the report (*see* "PGE Mineralization Classification").

Acknowledgments

This project would not have been possible without the generous support of the Ontario Ministry of Northern Development and Mines (MNDM) through the OTH program, the outstanding collaboration of geoscientists from the OGS Precambrian Geoscience Section and Resident Geologist Program, and the help we received from company geologists, prospectors, and university researchers, who gave us access to properties, diamond-drill cores, grab samples, and pulps. Their generosity greatly increased the efficiency of data collection, allowing the addition of a significant number of intrusions over and above the original list, and greatly enhanced the quality of the products that resulted from this project.

Very special thanks are extended to the excellent field assistants who worked on the project: Étienne Dinel, Michel Houlé, Michelle Huminiki, Gilles Dessureau, Amy Robinson, Justin Dignard, Phil Cassell and Ken Wallace.

The authors also wish to acknowledge the collaboration of Larry Hulbert and Paul Stacey in the production of MRD 100 and in the posters and oral presentations related to this project.

We also wish to extend special thanks to Paula Takats, Stephanie Thibeault, Steve Josey, and Sara-Jane McIlraith for technical support, to Ed Debicki for coordinating the original compilation of intrusions to be studied, to Jack Parker for constructive reviews and editing of this report, and to Andy Fyon for his overall support of this project.

Methodology

SELECTION CRITERIA FOR MAFIC–ULTRAMAFIC INTRUSIONS

The main focus of this project involved an extensive, province-wide campaign to sample a significant number of prospective mafic–ultramafic intrusions in Ontario. An initial list of 180 intrusions was assembled by E.J. Debicki (OGS, unpublished data, 2000) based on recommendations from geoscientists in the OGS Precambrian Geoscience Section, the OGS Resident Geologist Program, and geologists from several mining companies that are actively exploring for PGEs in Ontario. This list was reduced to approximately 70 intrusions utilizing the following selection criteria:

1. Inclusion of a representative suite of intrusions from the 3 geological provinces in Ontario (Grenville, Southern, and Superior), as all three have excellent or proven potential for PGE mineralization.

2. Selection of a representative number of intrusions in a variety of tectonic settings.

3. Selection of different types of intrusions representing various magma types, compositions, rock types, and morphologies.

4. Selection of intrusions that host different styles of PGE mineralization, including barren intrusions for comparison.

Where selection had to be made between similar intrusions in a specific area, priority was given to candidates that had the best outcrop exposure and easiest access. For example, an intrusion that is accessible by truck, all-terrain vehicle (ATV), and/or boat would be selected over an intrusion that is accessible only by float plane or helicopter. For areas where there were no other possibilities, float planes were used to access the intrusions.

The most important selection criterion was geographic coverage, inherently covering a broad range of tectonic settings, which, in turn, controls the types of intrusions examined. For this reason, all candidate intrusions were initially grouped in the Resident Geologist district in which they occur: Red Lake, Kenora, Thunder Bay South, Thunder Bay North, Sault Ste. Marie, Timmins, Sudbury, Kirkland Lake, and Southeastern Ontario (there were no candidate intrusions in the Southwestern Ontario district). Then, all districts were assessed separately using the above criteria.

Very favourable weather conditions, easier than expected access, and many other positive factors made it possible to complete the field investigations in less time than originally estimated. This allowed for the inclusion of several intrusions that were originally rejected, using the same criteria previously described. The list of candidate intrusions also evolved throughout the field season: some were dismissed, typically due to difficult access (restrictions by land owners, gated roads, washed-out roads, etc.), and others were added, based on additional information or samples provided by Ontario Geological Survey geologists (Precambrian Geoscience Section and Resident Geologist Program), mining company geologists, prospectors, and university researchers. A total of 109 intrusions were ultimately investigated, with the locations indicated in Figure 1.

FIELD INVESTIGATION

Field work was undertaken by four 2-person crews between mid-May and the beginning of September 2001. The majority of the samples were taken from surface outcrops, supplemented with diamond-drill core samples generously provided by mining companies, particularly in areas where outcrop was poor. Sampling was undertaken with the strategy of:

1. Obtaining a representative stratigraphic section through an intrusion, particularly for intrusions that exhibit well-defined layering (e.g., Centre Hill complex in the Abitibi greenstone belt: Theriault and Fowler 1996);

2. Obtaining samples of each of the known rock types within an intrusion, particularly for heterogeneous, multiphase intrusions (e.g., Entwine Lake intrusion in the Wabigoon Subprovince: Arnold et al. 2000; Stone 2000);

3. Obtaining samples from phases within an intrusion known to be associated with PGE mineralization in other mineralized bodies, for example, areas of repeated magmatic stratigraphy, mafic–ultramafic contacts, vari-textured and pegmatoidal zones, and highly altered zones.

The number of samples collected typically ranged from 10 to 30 per intrusion, depending on access, quality of outcrop, size of the intrusion, and complexity of the intrusion. Approximately 1300 samples from 109 intrusions were analyzed for major and selected trace elements and a thin section was made from each sample.

SAMPLE PREPARATION

A large mass of sample (typically 0.7-1.5 kg) was prepared and special care was taken to minimize contamination so that the sample powder could be used for additional geochemical analyses (e.g., REE and other high trace elements by ICP-MS, full suite of PGE by nickel sulphide fire-assay ICP-MS). All samples were first cut into blocks with a diamond rock saw to remove weathered surfaces and veins. All cut surfaces were then ground on a diamond-bonded steel lapping wheel to remove saw marks and other contaminants, thoroughly rinsed with water purified by reverse osmosis, and dried in air. The samples were crushed and pulverized at the Geoscience Laboratories in Sudbury, using the GEO preparation process, which involves crushing to <1/4 inch in jaw-crusher with steel plates that is cleaned between samples by crushing Killarney quartzite; splitting with a stainless steel riffle splitter that is cleaned with compressed air between samples; and pulverizing in a 99.8% pure Al_2O_3 planetary ball mill that is cleaned between samples by pulverizing Killarney quartzite.

SELECTION CRITERIA FOR GEOCHEMICAL ANALYSIS

The selection of major oxide and trace elements for analysis was made with the goal of characterizing each intrusion as thoroughly as possible at minimal expense. The elements are listed in Table 1 with the justification for their selection.

The majority of the data reported in this study are for samples collected in the summer of 2001, but the database also includes data for a smaller number of samples from previous projects by the Ontario Geological Survey. If high-quality geochemical analyses were available from those studies, the samples were only analyzed for the elements that had not been previously analyzed. The previous geochemical analyses are available in the published reports for those specific areas, the references for which are listed in the description section for each intrusion.

Terminology

The *platinum group elements* (PGEs: Pd, Pt, Rh, Ru, Ir, and Os) are commonly subdivided into Pt-group PGE (PPGE: Pd, Pt, Rh) and Ir-group PGE (IPGE: Ru, Ir, Os). IPGEs are normally compatible (i.e., concentrated in the solid phase) during moderate-high degree partial melting or fractional crystallization, whereas Au and PPGEs are normally incompatible (i.e., concentrated in the melt phase). However, Au, PPGEs, and IPGEs all partition strongly into sulphide minerals. This means that the abundances of IPGE increase with increasing degrees of partial melting of the mantle (after all of the sulphide phases have been consumed), decrease with increasing degrees of fractional crystallization of olivine, and increase with increasing degrees of accumulation of olivine. In contrast, the abundances of Au and PPGE decrease with increasing degrees of partial melting of the mantle (after all of the sulphide phases have been consumed), increase with increasing degrees of fractional crystallization of olivine, and decrease with increasing degrees of olivine accumulation. Au, PPGE, and IPGE all decrease during segregation of sulphide phases.

Table 1. Elements selected for analysis in this study.

Analyte	Information Given by this Analyte
SiO_2 TiO_2 Al_2O_3 Fe_2O_3 MnO MgO CaO Na_2O K_2O P_2O_5 LOI	The abundances of major and minor elements are controlled by and provide information about the composition of the source, the nature and degree of partial melting, the nature and degree of subsequent fractional crystallization, accumulation, assimilation, or magma mixing, and the nature and degree of deuteric magmatic, post-magmatic hydrothermal, or regional metamorphic alteration. They also aid in identifying rock types and establishing magmatic affinities.
Ni Cu Co Cr	These trace elements are controlled by the crystallization of olivine, pyroxene, chromite, and/or sulphide minerals, so they provide important constraints on the igneous evolution of the magma (e.g., partial melting, sulphide saturation, and fractional crystallization).
S	Total S concentrations and metal/S ratios aid in establishing the compositions of the sulphide minerals and the sulphide saturation history of the magma.
Se	S/Se ratios aid in determining the source of sulphur (magmatic, wall rock assimilation, etc.), which is important in understanding the nature and origin of the sulphide minerals.
Y Zr Rb Sr	Rb and Sr are easily mobilized in hydrothermal and metamorphic fluids and provide information about the nature and degree of deuteric, hydrothermal, or metamorphic alteration, whereas Y and Zr are less easily mobilized and provide information about magmatic processes. Ti, Y, and Zr, in particular, aid in establishing geochemical affinities and tectonic settings.
Pt Pd Au	Au, Pd, and Pt partition strongly into sulphide minerals, which makes them excellent indicators of the sulphide saturation history of the intrusion. They have different solubilities in hydrothermal fluids, so Pd/Pt ratios may be used to aid in establishing magmatic versus hydrothermal origins.

Collectively, all of the elements that partition preferentially into sulphide phases (e.g., Co, Ni, Cu, Au, and PGE) are called *chalcophile elements*. Ag, Au, and PGEs are also referred to as *precious metals*, and Au and PGEs are also referred to as *noble metals*.

Only Au, Pd, and Pt were analyzed during this project because they are normally the only precious metals that are present in abundances high enough to form economic concentrations whereas Rh, Ru, Ir, and Os are normally only recovered as by-products. Thus, unless indicated otherwise, the term PGE will be used in this report to refer to Au-Pd-Pt, with the understanding that the behaviour of Rh may be similar but that the behaviour of IPGEs may be different, especially if the magma remains undersaturated in sulphide.

Throughout this report, the term *grade* (as applied to mineralization) refers to the whole-rock metal content, whereas the term *tenor* refers to the metal content in 100% sulphide minerals.

ANALYTICAL METHODS

Unless otherwise noted, all geochemical analyses in this report were performed by the Geoscience Laboratories, Ontario Geoservices Centre, Sudbury.

Major and minor elements (Si, Ti, Al, Fe, Mn, Mg, Ca, Na, K, P) were determined by wavelength-dispersive X-ray fluorescence spectrometry (WD-XRFS) of fused glass disks. Loss-on-ignition (LOI) was determined gravimetrically. S, Ni, Cu, Co, Cr, Y, Zr, Rb, and Sr were analyzed by WD-XRFS of pressed powder pellets.

Se was analyzed by atomic absorption spectrophotometry (AAS).

Pt, Pd, and Au were determined by Ag fire-assay inductively coupled plasma-atomic emission spectroscopy (ICP-AES). The precious metals were concentrated into a silver bead by the classical fire-assay method; the silver bead was dissolved in nitric acid; the silver was precipitated; Pt, Pd, and Au were dissolved in *aqua regia*; and the solution was analyzed by ICP-AES.

Table 2 lists the detection limits and precision (% relative standard deviation at 2 standard deviations) for the methods used in this project. Precision was calculated by averaging the different method controls that have been run. Any method controls that were at the detection limit in the calculations were removed.

Table 2. Analytical methods used for each element with corresponding detection limits and precision.

Analyte	Method	Unit	Detection Limit	Precision (% RSD 2σ)
SiO$_2$	WD-XRFS	wt%	0.01	1.3
TiO$_2$	WD-XRFS	wt%	0.01	2.2
Al$_2$O$_3$	WD-XRFS	wt%	0.01	2.5
Fe$_2$O$_3$	WD-XRFS	wt%	0.01	1.3
MnO	WD-XRFS	wt%	0.01	7.5
MgO	WD-XRFS	wt%	0.01	2.9
CaO	WD-XRFS	wt%	0.01	1.9
Na$_2$O	WD-XRFS	wt%	0.01	5.6
K$_2$O	WD-XRFS	wt%	0.01	8.3
P$_2$O$_5$	WD-XRFS	wt%	0.01	32.1
LOI	Gravimetric	wt%	0.05	4.8
Total		wt%		1.3
S	WD-XRFS	wt%	0.01	7
Se	AAS	ppb	7	10
Ni	WD-XRFS	ppm	3	5
Cu	WD-XRFS	ppm	4	5
Co	WD-XRFS	ppm	9	10
Cr	WD-XRFS	ppm	2	7
Y	WD-XRFS	ppm	2	7
Zr	WD-XRFS	ppm	2	8
Rb	WD-XRFS	ppm	2	8
Sr	WD-XRFS	ppm	2	5
Pt	FA-ICP-AES	ppb	0.5	20
Pd	FA-ICP-AES	ppb	0.9	20
Au	FA-ICP-AES	ppb	0.9	25

RSD: relative standard deviation; SD: standard deviation; WD = wavelength dispersive; XRFS = X-ray fluorescence spectrometry; AAS = atomic absorption spectrometry; FA = fire assay; ICP = inductively-coupled plasma; AES = atomic emission spectroscopy.

GEOCHEMICAL DISCRIMINATION DIAGRAMS

The geochemical discrimination diagrams used in this study include:

1. Al–Fe+Ti–Mg cation plot
2. Pd versus Cu plot
3. Ni/Pd versus Cu/Pt and Pd/Pt versus Ni/Cu plots
4. Ni/Pd versus Ni/Cu plot

Jensen Cation Plot

The Al–Fe+Ti–Mg cation plot (Jensen 1976) is commonly used to discriminate between tholeiitic and calc-alkalic rocks, particularly those in which mobility of alkali elements makes the traditional AFM (alkali-Fe-Mg) diagram unreliable. This diagram was designed for metavolcanic rocks, so care must be taken when using it for cumulate rocks (e.g., peridotites, pyroxenites, gabbros, and anorthosites), which will plot on mixing lines between the composition of the lava and the cumulus mineral(s). For example, accumulation of olivine in a komatiitic magma will drive the composition toward the high-Mg end of the Mg–Fe+Ti join; accumulation of olivine + pyroxene in a komatiitic basaltic magma will drive the composition toward the central part of the Mg–Fe+Ti join; accumulation of pyroxene + plagioclase in a basaltic magma will drive the composition of the rock toward the central part of the diagram (depending on the proportions of pyroxene and plagioclase); and accumulation of Fe-Ti oxides in a basaltic magma will drive the composition of the rock toward the Fe+Ti corner of the diagram.

Pd versus Cu Diagram

The Pd versus Cu plot is commonly used to distinguish rocks that originated from a sulphide-saturated or sulphide-undersaturated parental magma (e.g., Vogel et al. 1999). Most sulphide-undersaturated rocks plot near a Pd/Cu ratio of approximately 10,000 because most mantle-derived magmas contain approximately 7000-8000 times more Cu than Pd, and because Cu and Pd are both incompatible during fractionation of silicate minerals (e.g., olivine). However, Pd partitions approximately 100 times more strongly into sulphide phases than Cu, so removal of a sulphide phase normally reduces the abundances of Pd and Cu and the Pd/Cu ratio. Addition of sulphide phases normally increases the abundances of Pd and Cu and the Pd/Cu ratio. The amount of Pd and Cu removed from the magma (and concentrated in the sulphide phase) depends on the relative masses of silicate magma and sulphide melt (Campbell and Naldrett 1979). Samples containing disseminated sulphide minerals that equilibrated with small amounts of magma will have higher abundances of Pd and Cu and lower Pd/Cu ratios than samples that contain disseminated sulphide minerals that equilibrated with large amounts of magma.

Ni/Pd versus Cu/Pt, Pd/Pt versus Ni/Cu, and Ni/Pd versus Ni/Cu Diagrams

The relative order of partitioning of chalcophile elements between olivine and silicate magma is Ni > IPGE > 1 > PPGE > Cu and the relative order of partitioning between sulphide melt and silicate magma is PGE >>> Cu > Ni >> 1 (see reviews by Barnes and Maier 1999; Mathez 1999; Crocket 2002). Thus, Ni/Cu ratios are more sensitive to the degree of olivine fractionation/accumulation or the degree of partial melting, whereas Ni/Pd and Cu/Pt ratios are more sensitive to the degree of sulphide fractionation or accumulation (Barnes et al. 1985; Barnes 1990). Vectors showing the geochemical effects of the different processes are shown on the diagrams.

Pd is approximately half as abundant as Pt in most mantle-derived magmas, but Pd appears to partition more strongly into silicate melts than Pt, so most mantle-derived magmas have Pd/Pt ratios greater than unity (see review by Crocket 2002). Magmas derived from lower degrees of partial melting (e.g., lamprophyres, kimberlites, ocean-island basalts, flood basalts, and high-Mg basalts) have higher Pd/Pt ratios than those derived by higher degrees of partial melting (e.g., komatiitic basalts and komatiites). Pd may also partition more strongly into sulphide phases than Pt (see review by Crocket 2002) and both $D^{Sil/Liq}$ (partition coefficient for an element between silicate minerals and the liquid) and $D^{Sul/Liq}$ (partition coefficient of an element between sulphide phases and the liquid) vary with magma composition, metal/S ratio, fO_2 (oxygen fugacity), and fS_2 (sulphur fugacity), so Pd/Pt ratios in most magmatic PGE and Ni-Cu-(PGE) deposits commonly vary within the range 0.5-5. Pd and Pt are both soluble in hydrothermal fluids (see review by Wood 2002), so hydrothermally-generated or hydrothermally-modified PGE mineralization (e.g., Lac des Iles, Rathbun Lake) commonly (but not always) have higher and more variable Pd/Pt ratios than magmatic PGE and Ni-Cu-(PGE) mineralization (e.g., Merensky Reef, Bushveld Complex, Kambalda). Thus, the Ni/Pd versus Ni/Cu, Ni/Pd versus Cu/Pt, and Pd/Pt versus Ni/Cu plots allow discrimination of magma type (ultramafic vs. mafic), determination of the degree of sulphide fractionation or accumulation, and determination of the nature of mineralization (magmatic vs. "hydrothermal").

Trace Element Ratios

Ti, Zr, and Y are moderately compatible lithophile elements that occur in slightly different abundances in primitive (undepleted) mantle, depleted mantle, and enriched mantle and in very different abundances in continental crust. Ti/Zr, Zr/Y, and Ti/Y ratios may be used to distinguish mantle sources and tectonic settings provided that the magmas have not fractionated titanite, zircon, or rutile (e.g., Sun 1980; Weaver and Tarney 1984; Rollinson 1993; Taylor and McLennan 1995). For this reason, we have compared the ratios for each intrusion to average Mid-Ocean Ridge Basalt (MORB), Ocean Island Basalt (OIB), continental flood basalts (CFB), Archean upper continental crust (AUCC), and Archean total continental crust (ATCC) in order to aid in establishing the nature of the source region and/or the degree of involvement of continental crust in the petrogenesis of the parental magmas. Because of the overlap in trace element compositions of continental crust, sediments derived from continental crust, and sources enriched in crustal components, it is not normally possible to distinguish between magmas contaminated by crustal materials or sources enriched by crustal materials. The Ti/Zr, Zr/Y, and Ti/Y ratios of several mantle and crustal reservoirs are compiled in Table 3.

Table 3. Trace element ratios of various mantle and crustal reservoirs.

	Ti/Zr	Zr/Y	Ti/Y
PM	115	2.4	280
DM	116	2.33	273
MORB	100	2.6	260
OIB	61	10	610
CFB	25-82	4.3-18	160-950
AUCC	40	6.9	278
ATCC	60	5.3	316

PM = primitive mantle (McDonough and Sun 1995); **DM** = depleted mantle (formed by 2% partial melting of PM using partition coefficients derived by dividing the abundance of an element from primitive mantle from the abundance in the bulk continental crust (Taylor and McLennan 1995). See Hofmann (1988) for details; **MORB** = Mid-Ocean Ridge Basalt; **OIB** = Ocean Island Basalt (Sun 1980); **CFB** = Continental Flood Basalt (Hergt et al. 1989; Ellam and Cox 1989; Flanagan 1973); **AUCC** = Archean Upper Continental Crust; **ATCC** = Archean Total Continental Crust (Taylor and McLennan 1995).

PGE Mineralization Classification

Lesher and Keays (2002) have recently published a classification scheme for Ni-Cu-PGE mineralization in komatiites. Although the scheme was developed for komatiite-related deposits, it is also applicable, in most cases, to Ni-Cu-PGE and PGE mineralization in mafic and ultramafic intrusions. As such, we have used a modified version of that scheme in this study, as summarized below and in Table 4. It is important to understand that these mineralization types are not mutually exclusive and that multiple types may occur within a single mafic–ultramafic body, or even within a single deposit or occurrence.

Type I stratiform basal mineralization forms at an early stage in the crystallization history of the host unit and occurs as layers at or near the bases of the host units. The PGE mineralization in the East Bull Lake Intrusive Suite and the Nipissing Gabbro (James et al. 2002) are examples of this type.

Type II strata-bound mineralization forms at a late stage in the crystallization history of the host unit and normally occurs in the central parts of the host units, although it sometimes occurs in lower and upper chilled margins. The PGE mineralization in the Entwine Lake intrusion (Arnold et al. 2000) and in the eastern part of the Coldwell complex are examples of this type.

Type III stratiform "reef"-style mineralization forms at an intermediate to late stage in the crystallization history of the host unit and is typically associated with internal sulphide and/or chromite horizons. As noted by Lesher and Keays (2002), it is a very minor and normally sub-economic mineralization type in komatiites, but is the most common primary mineralization in PGE deposits (e.g., Merensky Reef, Bushveld Complex, South Africa; J-M Reef, Stillwater Complex, USA; Main Sulphide Zone, Great Dyke, Zimbabwe). The PGE occurrences in the northern part of the Coldwell complex are interpreted to be associated with magnetite-rich horizons (Allan MacTavish, Appinite Geological Consulting, personal communication, 2002; Barrie et al. 2001) and are examples of this type.

Type IV secondary mineralization is associated with Types I, II, or III. Lesher and Keays (2002) identified two subtypes: **Type IVa** Ni-enriched metasediment mineralization, which commonly occurs with Type I komatiite-associated Ni-Cu-PGE deposits, but which has not clearly been identified in PGE deposits (although the Trout Bay PGE occurrence could be of this type); and **Type IVb** hydrothermal vein mineralization, which has not been identified in Ontario, but for which there is potential for new discoveries. To these we have added **Type IVc** hydrothermal disseminated mineralization, which is defined here as sulphide-poor disseminated mineralization hosted in lithologies that show evidence of interaction with hydrothermal fluids (e.g., pegmatitic pods and vari-textured lithologies, hydrous mineral alteration of silicates, intrusion breccias dominated by cognate enclaves). The Lac des Iles deposit (Lavigne et al. 2002) is the best example of this mineralization type.

Type V tectonically offset mineralization occurs in fault and shear zones, typically associated with Type I mineralization. Massive sulphide mineralization is more easily mobilized into fault and shear zones because it is more ductile than disseminated sulphide mineralisation. Lesher and Keays (2002) made a distinction between Type I ores that are merely deformed, but may contain fragments of adjacent wall rocks, reaction zones, and veins, and Type V ores that have been mobilized into wall rocks and are no longer physically contiguous with the original host rocks. The Rathbun Lake occurrence in the Wanapitei intrusion (Rowell and Edgar 1986) and the Gordon Lake Mine (Scoates 1972) are probable examples of this type of mineralization, although no associated Type I massive sulphide mineralization has yet been identified.

Table 4. Classification scheme for PGE mineralization in mafic–ultramafic intrusions (adapted from Lesher and Keays 2002).

Type	Name	Location
I	Stratiform basal	At or near the base of intrusion
II	Strata-bound internal	Disseminated within intrusion (may or may not occur within specific horizons)
III	Stratiform "reef" style	PGE-enriched horizon, typically within strongly differentiated intrusions
IV	IVa Mineralized metasediments	Layers in metasediments adjacent to intrusion
	IVb Hydrothermal veins	Veins in footwall of intrusion, less commonly within intrusion itself
	IVc Hydrothermal disseminated	Disseminated within intrusion with evidence for hydrothermal mobilization
V	Tectonic offset	Mobilized into fault and shear zones

FACTORS INFLUENCING THE PGE POTENTIAL OF MAFIC–ULTRAMAFIC BODIES

Current exploration models for PGE mineralization emphasize the following factors in terms of enhancing the economic potential of individual intrusions. It should be noted, however, that they should be considered to be only guides, as PGE mineralization should be expected to be found in new environments. Nevertheless, some of the most important factors include:

1. Intrusion size

This feature is more important for stratiform "reef-style" (Type III) than for Type I and Type II mineralization, but is it typically more favourable to have a larger magma chamber or more magma from which PGE may be extracted. Larger intrusions also typically have longer strike lengths, which is particularly important for Type III mineralization. However, as it is the amount of magma that interacts with the mineralization that is most important, the size of the intrusion is less important than the size of the system and the dynamics of the ore-forming environment.

2. Ultramafic and mafic rocks

Most economic PGE mineralization is associated with mafic–ultramafic intrusions rather than with mafic or intermediate intrusions because they are more likely to be undersaturated in sulphide (see 4 below). The ratio of ultramafic to mafic rocks is variable even in large intrusions (e.g., Bushveld, Stillwater, Munni Munni, Muskox, Great Dyke: Hoatson and Blake 2000), depending on the dynamics of the system, the amount of olivine/pyroxene accumulation, and the degree of *in situ* fractional crystallization, but nearly all economic to near-economic PGE-bearing intrusions contain significant amounts of ultramafic rocks.

3. PGE-rich parental magma

Magmas derived from different sources, derived by different degrees of partial melting, or derived by different melting processes contain different abundances of PGE (e.g., Barnes et al. 1985). Magmas derived from PGE-enriched refractory mantle are considered to be the most favourable parental magma (e.g., Hamlyn and Keays 1986). However, melts derived from depleted (normal) mantle at moderate to high degrees of melting are also undersaturated in sulphide (see 4 below) and represent a favourable parental magma. Typically, a background value of >10 ppb Pt+Pd is considered to be most desirable for a parental magma.

4. Sulphide-undersaturated parental magma (or sulphide-saturated with no loss of immiscible sulphide melt)

PGEs partition very strongly into sulphide phases, so magmas that leave sulphide fractions behind in the residue, as a consequence of low-degree partial melting (or high S contents), or that segregate sulphide minerals during ascent may be stripped of PGE. Even magmas derived from a PGE-rich source will lose PGEs if they attain sulphide saturation and segregate sulphide phases during ascent to the upper crust.

However, the degree of PGE depletion in the magma is dependant on the amount of sulphide mineral phases that are segregated. Magmas that attain sulphide saturation but lose only small amounts of sulphide may still have potential to form PGE deposits. Bodies that attain sulphide saturation and lose moderate amounts of sulphide have lower potential to form PGE deposits, but may have potential to form Ni-Cu-(PGE) deposits. Bodies that attain sulphide saturation and lose large amounts of sulphide have low potential to form PGE or Ni-Cu-(PGE) deposits (see discussion by Lesher et al. 2001).

A code (1= poor, 2=moderate, 3=good, 4=excellent), representing the preliminary assessment of the potential for PGE mineralization based on these criteria, is included in the description for each intrusion (see Appendix 4).

Study Areas

For logistical reasons, the province of Ontario was subdivided into seven parts, corresponding broadly to the subprovinces in which the mafic–ultramafic bodies under investigation occur. The Archean intrusions were grouped according to the geological subprovinces in which they occur, whereas all of the Proterozoic intrusions were grouped together (with the exception of the intrusions located in the Grenville Province, which were grouped separately). The subprovinces/groupings include:

1. Uchi and English River subprovinces
2. Wabigoon Subprovince
3. Quetico Subprovince
4. Wawa Subprovince
5. Abitibi Subprovince
6. Grenville Province
7. Proterozoic

For each subprovince/grouping, a brief geological background is presented. It is followed by a discussion and summary of the important features and interpretations for the mafic–ultramafic bodies in the subprovince/grouping. All information used for interpretations (magmatic affinities, source regions, suphide saturation history, and PGE anomalies) is reported in a series of tables located in Appendix 4. The tables in Appendix 4 also contain information on location, basic geological features, geochemical characteristics interpreted from data obtained in this study, statistical data, available maps, and other references covering each body. The geochemical diagrams, from which the geochemical interpretations were extracted, are presented in each section, below.

THE UCHI AND ENGLISH RIVER SUBPROVINCES

Geological Background

The Uchi Subprovince is an east-trending, 60 km wide by 600 km long belt of metavolcanic, metasedimentary, and granitoid rocks located in the west-central Superior Province (Figure 1). The ages of the various rocks range approximately between 3.0 and 2.7 Ga (Stott and Corfu 1991). It is bordered to the north by the Berens River Subprovince, to the south by the English River Subprovince, and extends from the Manitoba border in the west to the James Bay lowlands in the east.

The English River Subprovince is an east-trending, 30-100 km wide by 650 km long belt of metasedimentary and granitoid rocks located in the west-central Superior Province (Figure 1). The metasedimentary rocks contain detrital zircons as young as 2698 Ma and the granitoid rocks range between 2.65 and 2.70 Ga (Breaks 1991). The English River Subprovince is bordered to the north by the Uchi Subprovince, to the south by the Bird River, Winnipeg River, and Wabigoon subprovinces, and extends from the Manitoba border in the west to the James Bay lowlands in the east.

The majority of the mafic–ultramafic bodies in the Uchi and English River subprovinces sampled during this study are interpreted to be intrusive and synvolcanic (see specific descriptions in following section) and occur within felsic to intermediate metavolcanic rocks. The synvolcanic, mafic–ultramafic bodies at the Peterson and Trout Bay properties in the Red Lake greenstone belt are interpreted to have formed from parental magmas with compositions similar to komatiitic basalts. Several of the studied intrusions are syn- to post-tectonic and occur at the margins of greenstone belts and granitoid batholiths (e.g., July Falls) or within granitoid batholiths (e.g., Hammel Lake intrusion).

Fifteen mafic–ultramafic bodies in the Uchi Subprovince and one in the English River Subprovince were sampled as part of this project (Table 5).

An Al-Fe+Ti-Mg cation plot and Pd versus Cu, Ni/Pd versus Ni/Cu, Ni/Pt versus Ni/Cu, and Pd/Pt versus Ni/Cu plots for the mafic–ultramafic bodies in the Uchi and English River Subprovinces are shown in Figures 2, 3 and 4.

Table 5. Characteristics of the mafic–ultramafic bodies in the Uchi and English River subprovinces.

Location	Timing	Sulphide Saturation State	Magmatic Affinity	Source	Tectonic Setting	Mineralization Type
Bruce Lake	SV	SS	TH	DM	RA	Unknown
Dempster Lake	SV?	SS	TH		RA	Unknown
Dome-McDonough-Bateman	SV	SS	TH	DM	RA	Unknown
Golden Arm	SV	SU to SS	TH to KB	DM	RA	Unknown
Hammel Lake	ST to PT	SS	CA	MM	CM	Unknown
July Falls	ST to PT	SS	CA	MM	CM	Unknown
Kawashe Lake	SV	SS	TH	DM	RA	Unknown
McVicar Lake	ST to PT	SS	TH?	MM?	CM	Unknown
Pakwash Lake	SV	SS	CA	MM	CM	Unknown
Peterson property	SV	SS	KB	DM	RA	IVa
Pipestone Bay	SV	SU	TH	DM?	RA	Unknown
Pure Gold Gabbro	ST	SS	TH	EM?	RA	I or II
Rex-Werner-Bug Lakes		SU-SS	TH			I + V
Snakeweed	SV	SS	Fe-TH	DM	RA	Unknown
Thierry Mine		SS	TH-K			I
Trout Bay	SV	SU?	K	DM	RA?	V

Timing: PT = post-tectonic, SV = synvolcanic, ST = syn-tectonic; **Sulphide Saturation State:** SS = sulphide saturated, SU = sulphide undersaturated; **Magmatic Affinity:** CA = calc-alkalic, Fe-TH = high Fe-tholeiitic, K = komatiitic, KB = komatiitic basaltic, TH = tholeiitic; **Source:** DM = depleted mantle, EM = enriched mantle, MM = metasomatized mantle; **Tectonic Setting:** CM = convergent margin, RA = rifted arc.

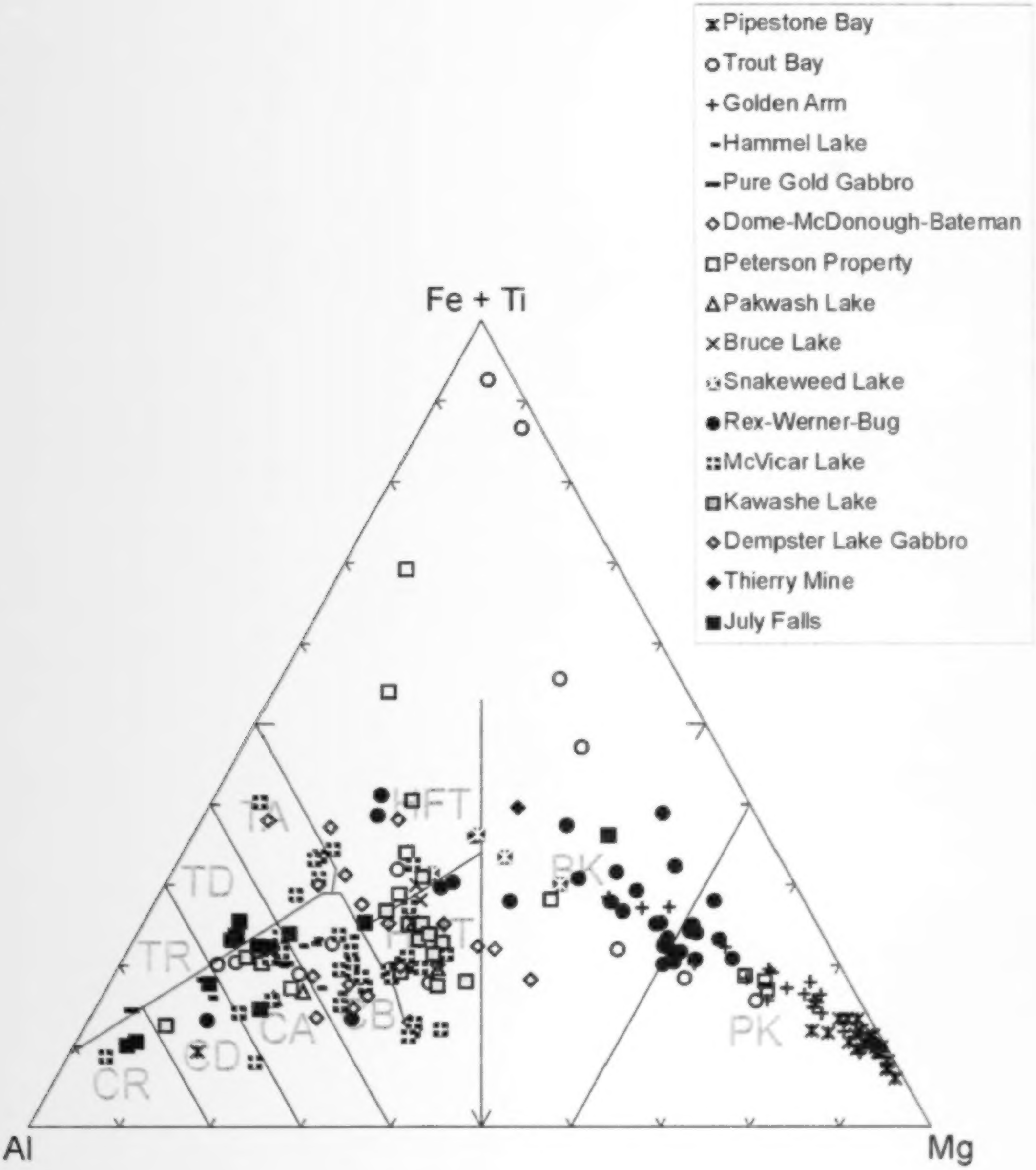

Figure 2. Al–Fe+Ti–Mg cation plot of samples from mafic–ultramafic bodies in the Uchi and English River subprovinces. Fields from Jensen (1976). C = calc-alkalic, T = tholeiitic, K = komatiitic, P = picritic, R = rhyolite, D = dacite, A = andesite, B = basalt, HF = high Fe, HM = high Mg.

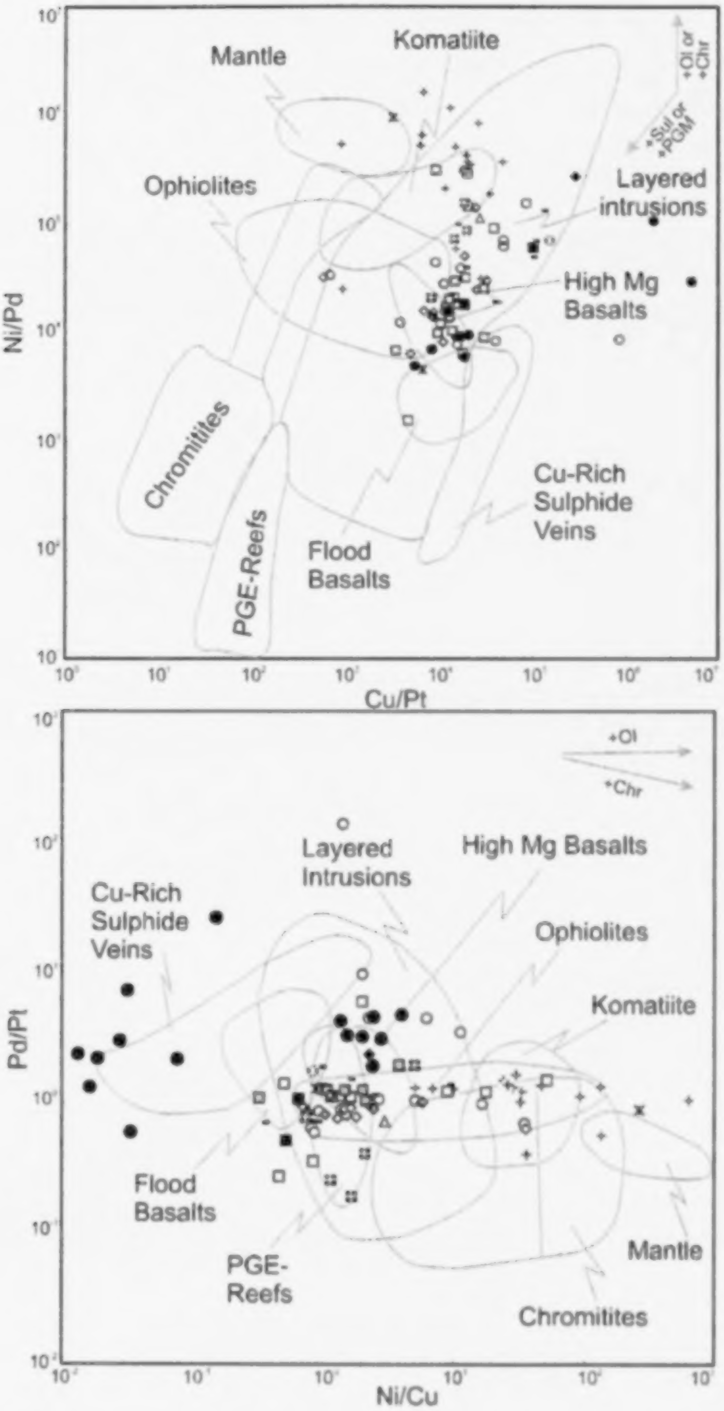

Figure 3. Ni/Pd versus Cu/Pt and Pd/Pt versus Ni/Cu diagrams of samples from mafic–ultramafic bodies in the Uchi and English River subprovinces. Fields from Barnes (1990). Sul = sulphides, PGM = platinum group minerals, Ol = olivine, Chr = chromite. See Figure 2 for legend.

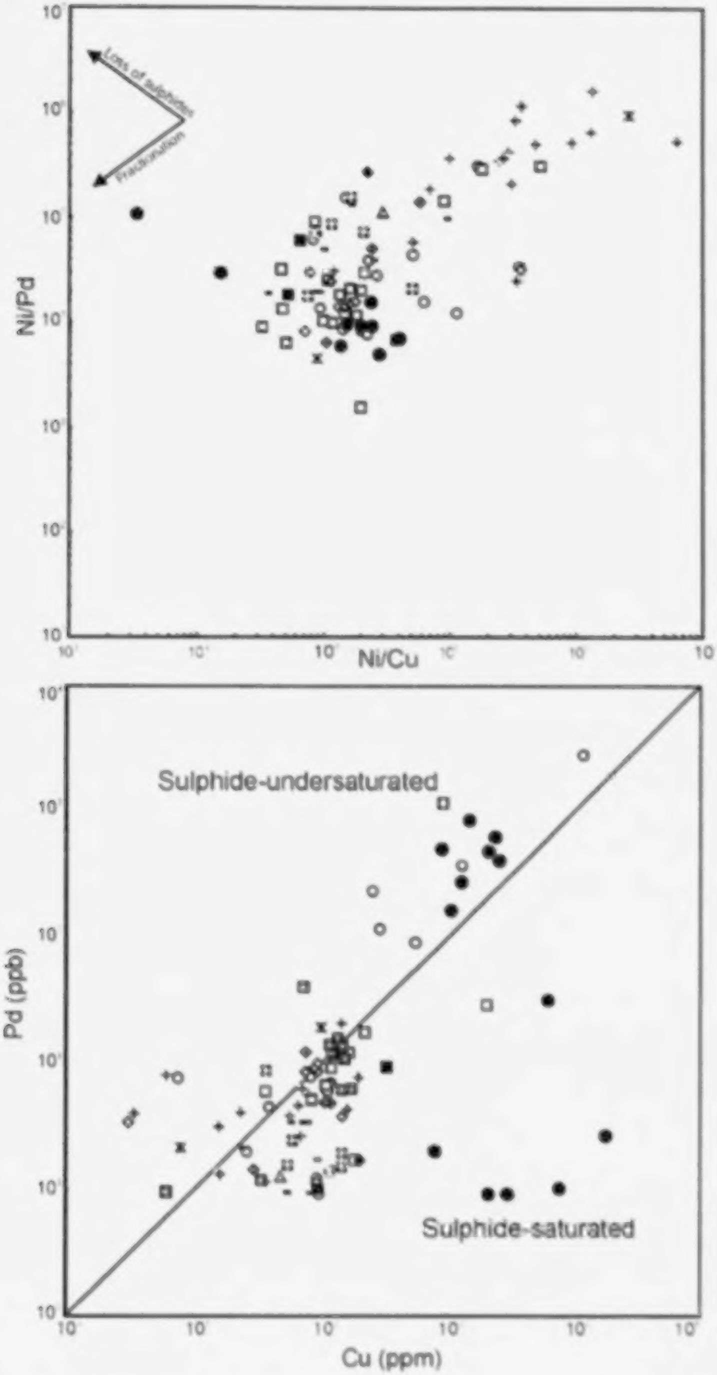

Figure 4. Ni/Pd versus Ni/Cu and Pd versus Cu diagrams of samples from mafic–ultramafic bodies in the Uchi and English River subprovinces. The line separating sulphide-saturated from sulphide-undersaturated fields in the Pd versus Cu diagram is approximate (Vogel et al. 1999). See Figure 2 for legend.

Summary and Discussion

Most of the intrusions in the Uchi Subprovince (including intrusions at Bruce Lake, Dempster Lake, Golden Arm on Red Lake, Kawashe Lake, Pipestone Bay on Red Lake, Snakeweed Lake, Pure Gold gabbro, and the mafic–ultramafic dikes in Dome, McDonough, and Bateman townships) are interpreted to be tholeiitic (including high-Fe to high-Mg tholeiites) and derived from a depleted mantle source. However, the Pure Gold gabbro displays trace element characteristics indicative of minor degrees of crustal contamination or minor degrees of metasomatism in the source region of the parent magma.

The intrusions exhibit different sulphide saturation histories. The intrusions at Bruce Lake, Dempster Lake, Dome-McDonough-Bateman townships, Kawashe Lake, Pure Gold, and Snakeweed Lake are interpreted to be sulphide saturated. The ultramafic intrusion at Golden Arm contains both sulphide-saturated and sulphide-undersaturated phases, whereas the intrusion at Pipestone Bay is sulphide undersaturated. The Bruce Lake, Dempster Lake, Golden Arm, Pure Gold, and Snakeweed intrusions have extremely low PGE contents and, as the magmas were saturated in sulphide, it is likely that PGEs were lost during segregation of a sulphide phase. Thus, these intrusions are interpreted to have lower potential to host PGE mineralization. The intrusions in Dome, McDonough, and Bateman townships and the intrusion at Kawashe Lake have higher PGE contents, are interpreted to be saturated in sulphide, and may have moderate to good potential to host Types II or I mineralization. The sulphide undersaturated Pipestone Bay intrusion, has low to moderate PGE contents and may have moderate potential to host Type III mineralization. All of these intrusions typically exhibit low to moderate Pd/Pt ratios, which suggests a magmatic origin for the PGE with limited hydrothermal or metamorphic redistribution.

The PGE occurrences at the Trout Bay and Peterson properties at Red Lake are hosted by mafic–ultramafic rocks that range from sulphide undersaturated to sulphide saturated and host Types IVa and/or V mineralization. The presence of high S and As in the ultramafic rocks, near contacts with metasedimentary rocks (typically silicate- and oxide-facies iron formations) or within the metasedimentary rocks themselves, suggests interaction between the mafic–ultramafic and metasedimentary rocks. It is unlikely that the ultramafic rocks achieved sulphide saturation via assimilation of metasedimentary rocks, as these rocks contain very few sulphide minerals and neither the ultramafic magma nor the sedimentary host rocks would have contained abundant arsenic. It is more likely that S and As were introduced by hydrothermal/metamorphic fluids, along with other metals (e.g., Ni, Co, PGEs). The mafic–ultramafic rocks exhibit trace element geochemical characteristics typical of magmas derived from a depleted mantle source. Pd/Pt ratios range between 1 and 5. Higher Pd values are systematically associated with higher Co and locally higher Ni contents. Scanning electron microscope (SEM) examination of the mineralization at the Peterson property indicated the presence of a Fe-Ni-Co arsenide mineral. The sporadic and very high abundances of PGEs suggest that discrete platinum group minerals are present. More work is required on these bodies to establish their potential to contain Types I, IV, and V mineralization.

The syn- to post-tectonic mafic intrusions studied in this area include calc-alkalic intrusions (Hammel Lake, July Falls, and Pakwash) and a probable tholeiitic intrusion (McVicar Lake). The Hammel Lake, July Falls, and Pakwash intrusions are all saturated in sulphide, have extremely low PGE contents, and are typically composed of fractionated lithologies (e.g., diorite). Thus, their potential to host PGE mineralization is low. The McVicar Lake intrusion appears to be tholeiitic, but is interpreted to be derived from an enriched mantle source and/or has assimilated crustal material. The sampled lithologies from the McVicar Lake intrusion are interpreted to be saturated in sulphide with uniformly low PGE abundances, suggesting loss of PGE at an early stage in the petrogenetic history of the magma, i.e., during partial melting or ascent. This may significantly limit the potential for PGE mineralization in the McVicar Lake intrusion.

The host rocks at the Thierry Mine (active from 1977 to 1982) in the Pickle Lake region appear to be tholeiitic to komatiitic, but more geochemical data are required to establish the magmatic affinity of the parental magma. Large amounts of PGEs and significant amounts of Ni were mined from this small body (Patterson and Watkinson 1984a,b). Thus, this type of intrusion represents an extremely favourable PGE target.

The Rex-Werner-Bug Lakes mafic–ultramafic bodies are tholeiitic and have highly anomalous PGE contents. The bodies range from sulphide undersaturated to sulphide saturated and some of the latter host Types I and V mineralization. These bodies were mined for Ni and Cu (Gordon Lake Mine) and Co (Werner Lake cobalt mine). These mafic–ultramafic bodies were affected by high grade metamorphism and strong deformation, which has obscured many of their primary geochemical and geological features. More work is required to evaluate the PGE potential of these intrusions.

The mafic–ultramafic bodies with the highest PGE potential include mafic–ultramafic dikes in Dome, McDonough, and Bateman townships, intrusions at Kawashe Lake and Pipestone Bay on Red Lake, intrusions at Rex, Werner, and Bug lakes, and intrusions in the Thierry Mine area. The Peterson Property and Trout Bay PGE occurrences at Red Lake require more work to clearly establish the relationship between the host rocks and the PGE occurrences, and to fully evaluate the nature and extent of Ni-Cu-(PGE) mineralization.

THE WABIGOON SUBPROVINCE

Geological Background

The Wabigoon Subprovince is located in the west-central part of the Superior Province. It is bordered to the north by the Winnipeg River and English River subprovinces, and to the south by the Quetico Subprovince, and extends approximately east-northeast for 900 km from the Manitoba–Ontario provincial border to the James Bay lowlands (Figure 1; Blackburn et al. 1991). It is a composite granite-greenstone terrane that represents a collage of oceanic and older continental terranes assembled at circa 2.7 Ga (Tomlinson et al. 2001): the 3.0 to 3.9 Ga Marmion terrane; the 3.3 to 3.0 Ga Winnipeg River terrane; and the 2.77 to 2.69 Ga western Wabigoon granite-greenstone terrane (Tomlinson et al. 2001).

Mafic–ultramafic intrusions in the Wabigoon Subprovince occur in two principal spatial and temporal associations (Blackburn et al. 1991): 1) synvolcanic sills associated with mafic metavolcanic rocks in greenstone belts and 2) syntectonic intrusions at the margins of major batholiths, coeval with dacitic volcanism and the early stages of felsic plutonism (Macdonald and Cherry 1988).

Twenty-nine intrusions were sampled as part of this project: 10 synvolcanic intrusions; 10 syntectonic intrusions; 1 syn- to post-tectonic intrusion; 3 post-tectonic intrusions; 1 serpentinized ultramafic intrusion; and 1 enclave within a batholith (Table 6).

An Al-Fe+Ti-Mg cation plot and Pd versus Cu, Ni/Pd versus Ni/Cu, Ni/Pt versus Ni/Cu, and Pd/Pt versus Ni/Cu plots for the mafic–ultramafic bodies in Wabigoon Subprovince are shown in Figures 5, 6, 7, 8, 9 and 10.

Table 6. Characteristics of the mafic–ultramafic bodies in the Wabigoon Subprovince.

Location	**Timing**	**Sulphide Saturation State**	**Magmatic Affinity**	**Source**	**Tectonic Setting**	**Mineralization Type**
Bad Vermillion	SV				RA	Unknown
Buck Lake	ST to PT	SS	TH	MM	CM	I and IV
Caliper		SU?			CM	Unknown
Caribou Stock	ST	SS	Fe-TH Mg-TH	DM	CM	Unknown
Chrome and Puddy Lakes	ST to PT	SU to SS	TH		CM	Unknown
Cobb Bay-Sturgeon Lake North	SV	SS	Fe-TH	DM	CM to RA?	Unknown
Crooked Green	SV to ST	SS				Unknown
Denmark Lake-Rupert Lake	ST	SS	TH	DM	CM	I
Dobie	SV to ST?	SS	CA		CM	II
Empire Lake	PT					Unknown
Grassy Portage	SV	SU	Fe-TH		CM?	Unknown
Gzowski	SV to ST	SS	TH + CA		CM	Unknown
Handcuff Lake	SV to PV	SS	CA		CM	Unknown
Jackson Gabbro-Ledingham	SV to ST	SU to SS	Fe-TH	DM	CM	Unknown
Jacobus	SV to ST	SS	TH?	MM?	CM	Unknown
Junior Lake	SV to ST	SU to SS	TH	DM?	CM	I and II
Kakagi Sills	SV	SS to SU	TH	DM	CM	Unknown
Lash-Carpenter		SS	CA	MM	CM	Unknown
Lower Caribou	PT	SU to SS	A	MM		Unknown
Marshall Lake	SV	SS	TH		MA	Unknown
Mountdew Lake	PV	SS	TH		CM	Unknown
Mulcahy Gabbro	ST	SS	Fe-TH	DM?	CM	I
Nabish Lake	ST	SS	TH	DM?		I or IV
O'Sullivan	SV	SS		DM?	CM	Unknown
Pike Lake	SV	SS	TH	MM?	CM	V
Pipestone Lake	SV	SS to SU	TH	DM?	CM to RA	Unknown
Roaring River	ST to PT	SS	CA	MM?	CM	II ± I
Ruffo Lake East and West	SV or ST to PT	SS	TH	DM	RA	Unknown
Tib Lake	ST to PT	SS	TH	MM	CM	Unknown
Toronto Lake	SV to ST	SU to SS	TH	DM	CM	Unknown

Timing: PT = post-tectonic, PV = post-volcanic, SV = synvolcanic, ST = syn-tectonic; **Sulphide Saturation State**: SS = sulphide saturated, SU = sulphide undersaturated; **Magmatic Affinity**: A = alkalic, CA = calc-alkalic, Fe-TH = high Fe-tholeiitic, Mg-TH = high Mg-tholeiitic, TH = tholeiitic; **Source**: DM = depleted mantle, MM = metasomatized mantle; **Tectonic Setting**: CM = convergent margin, MA = mature arc; RA = rifted arc; ? = unclear or based on limited data.

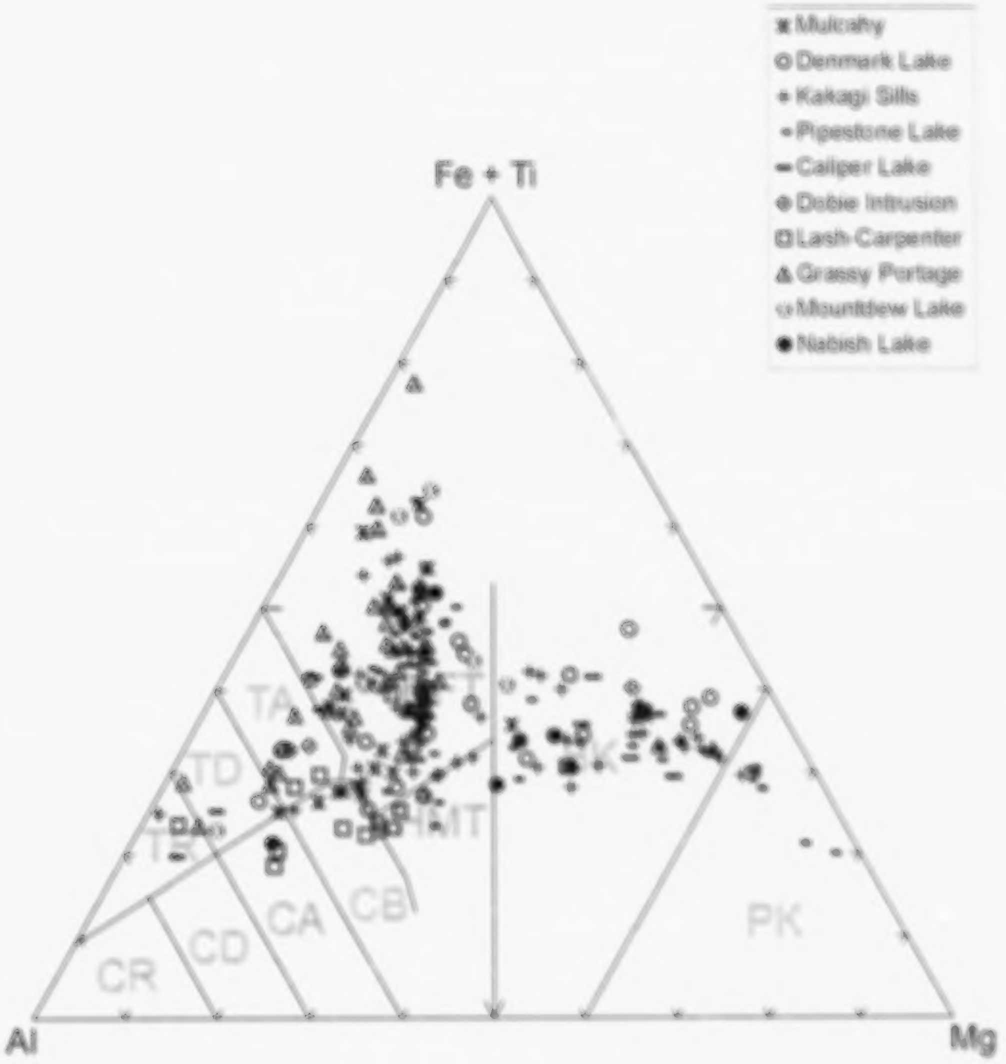

Figure 5. Al–Fe+Ti–Mg cation plot of samples from mafic–ultramafic bodies in the western portion of the Wabigoon Subprovince. Fields from Jensen (1976). C = calc-alkalic, T = tholeiitic, K = komatiitic, P = picritic, R = rhyolite, D = dacite, A = andesite, B = basalt, HF = high Fe, HM = high Mg.

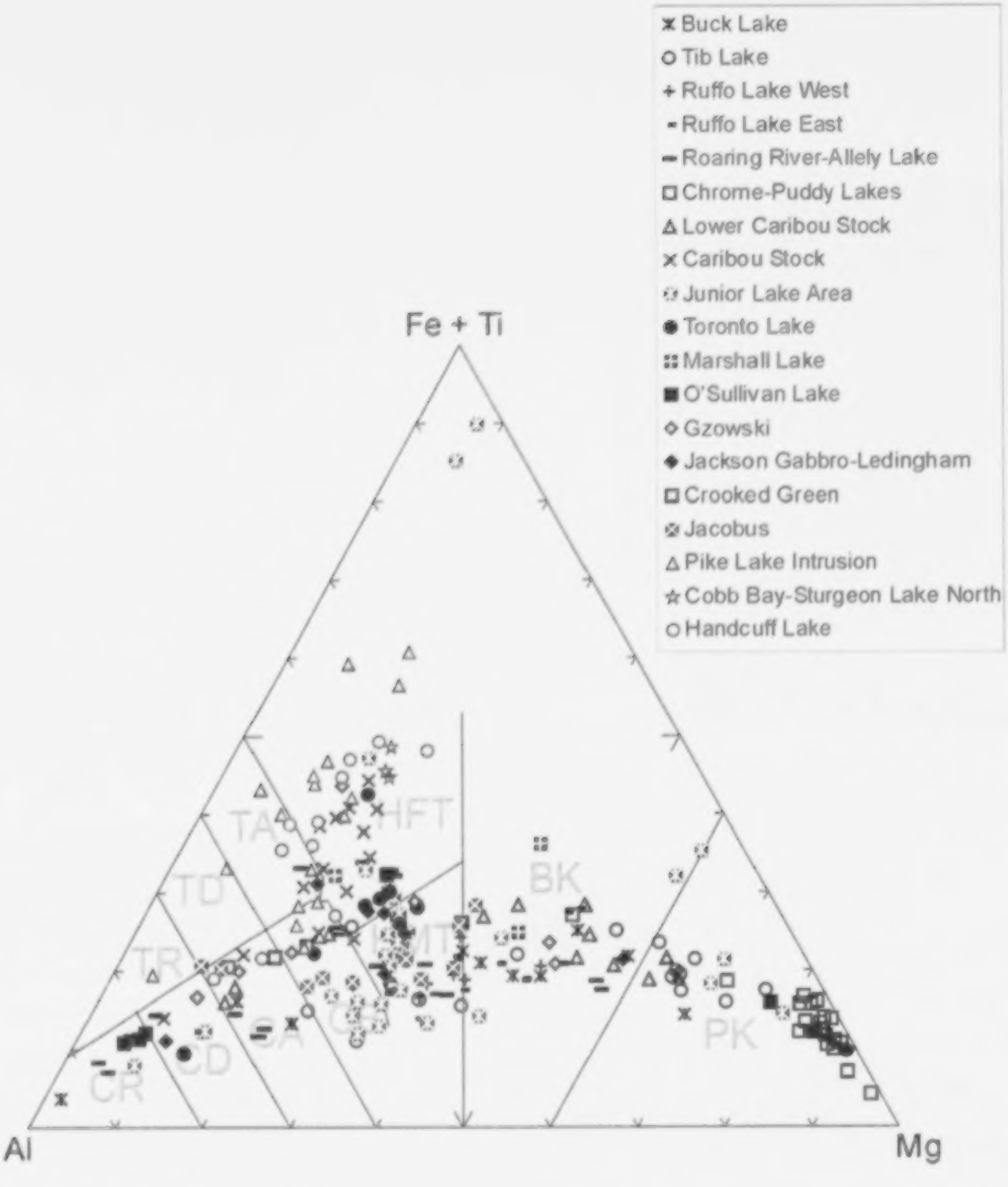

Figure 6. Al–Fe+Ti–Mg cation plot of samples from mafic–ultramafic bodies in the eastern portion of the Wabigoon Subprovince. Fields from Jensen (1976). C = calc-alkalic, T = tholeiitic, K = komatiitic, P = picritic, R = rhyolite, D = dacite, A = andesite, B = basalt, HF = high Fe, HM = high Mg.

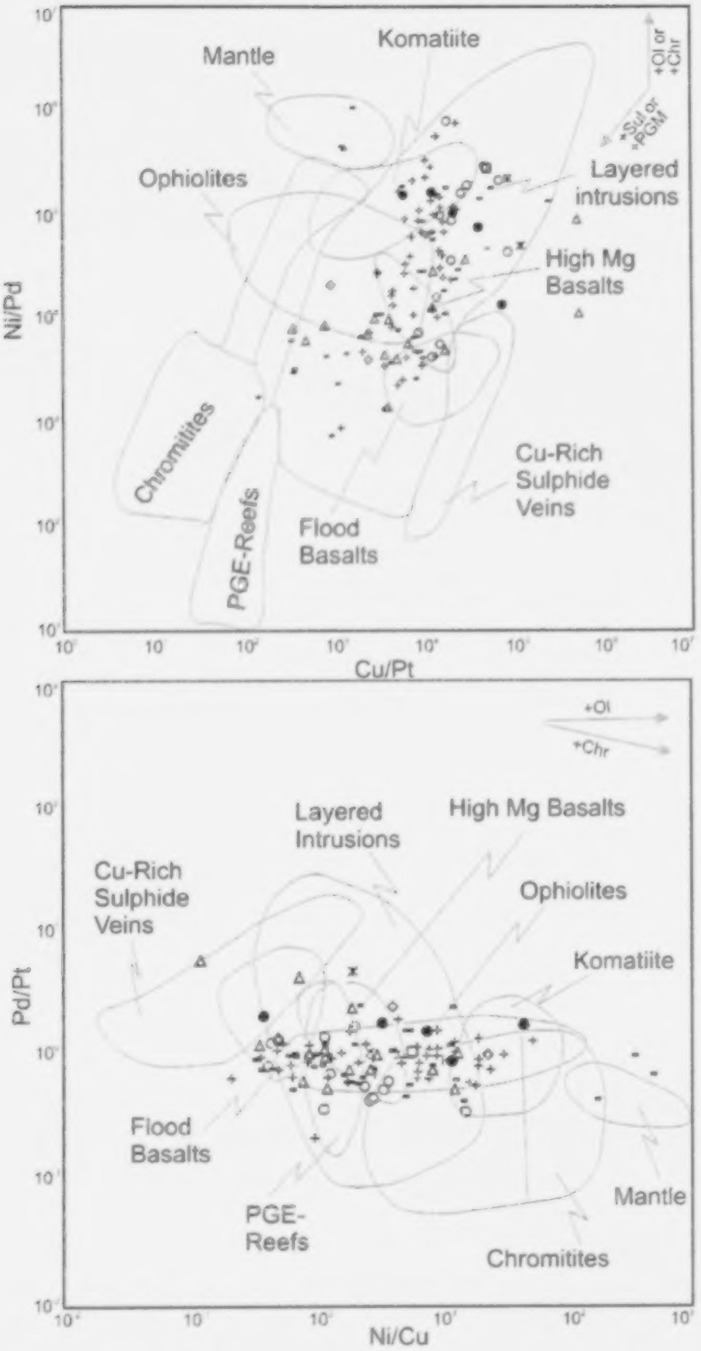

Figure 7. Ni/Pd versus Cu/Pt and Pd/Pt versus Ni/Cu diagrams of samples from mafic–ultramafic bodies in the western portion of the Wabigoon Subprovince. Fields from Barnes (1990). Sul = sulphides, PGM = platinum group minerals, Ol = olivine, Chr = chromite. See Figure 5 for legend.

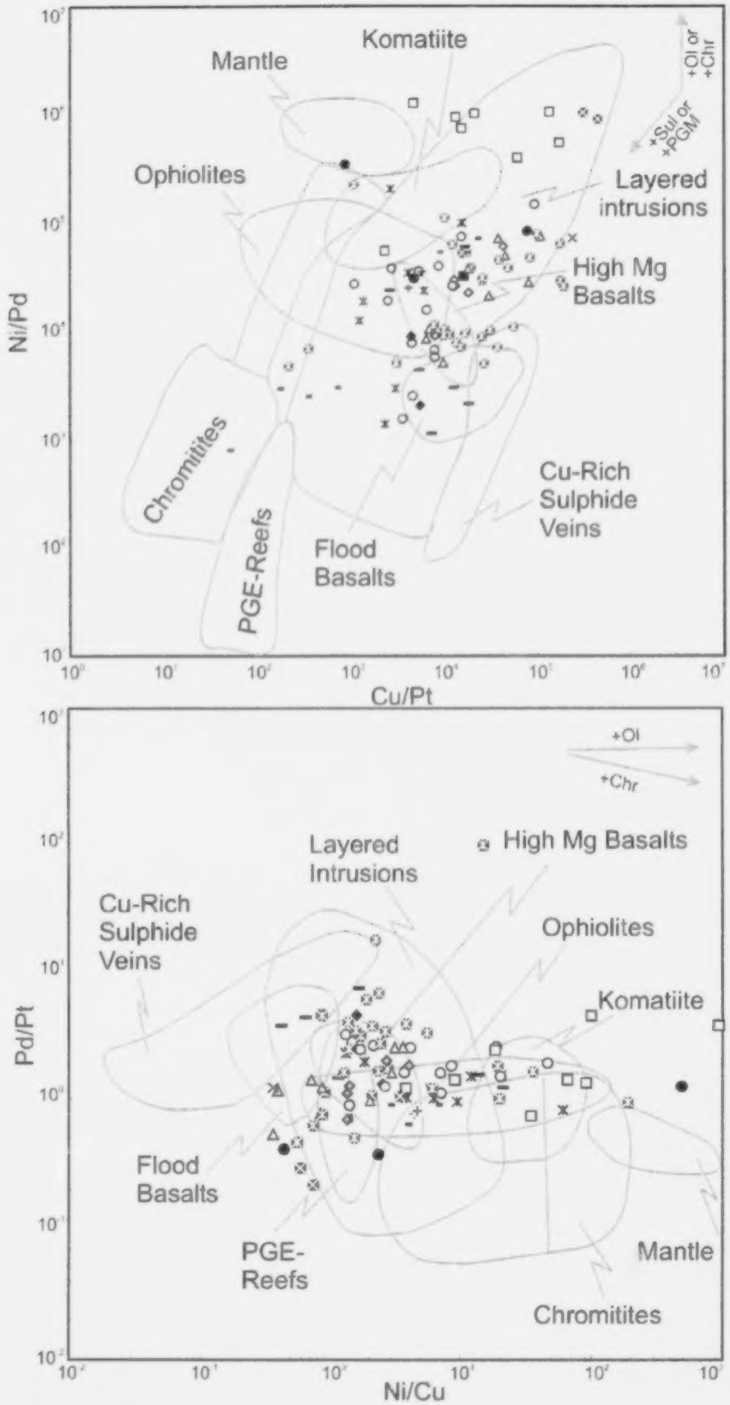

Figure 8. Ni/Pd versus Cu/Pt and Pd/Pt versus Ni/Cu diagrams of samples from mafic–ultramafic bodies in the eastern portion of the Wabigoon Subprovince. Fields from Barnes (1990). Sul = sulphides, PGM = platinum group minerals, Ol = olivine, Chr = chromite. See Figure 6 for legend.

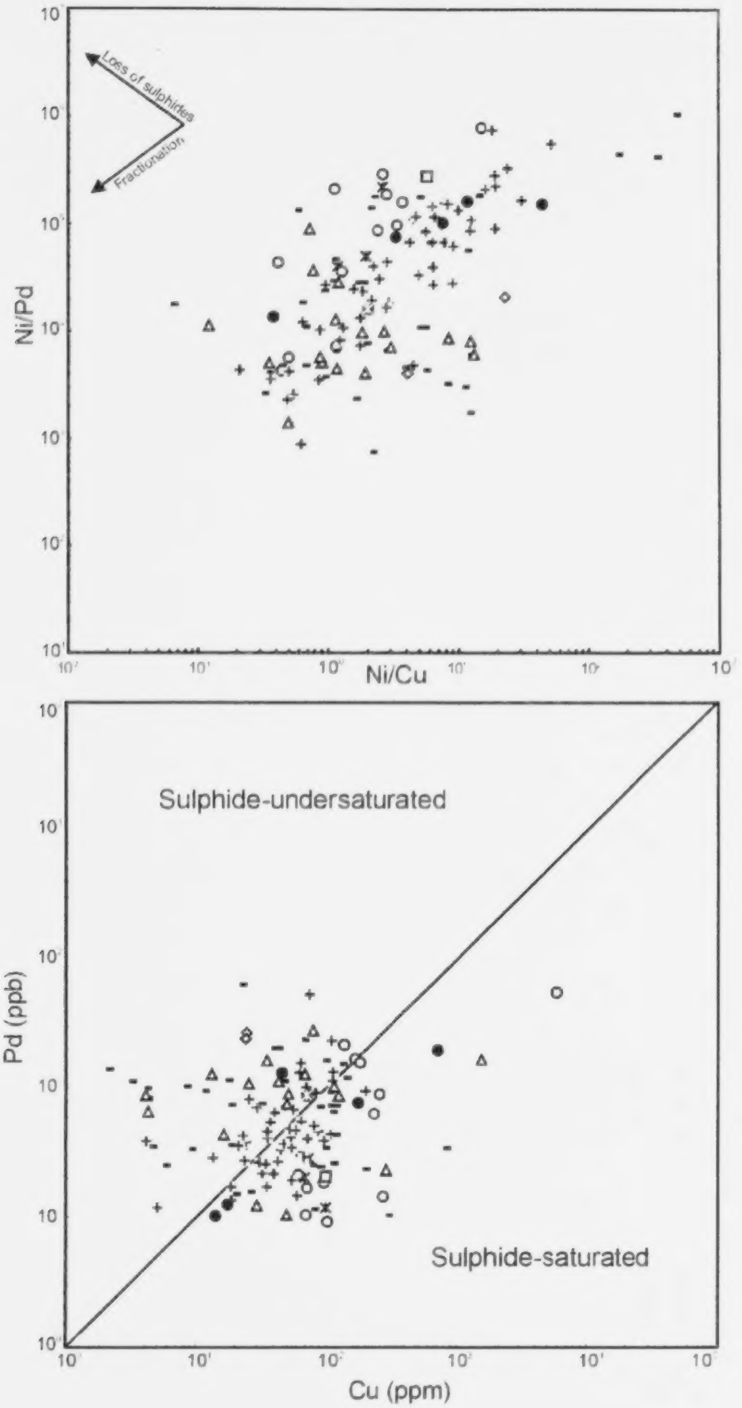

Figure 9. Ni/Pd versus Ni/Cu and Pd versus Cu diagrams of samples from mafic–ultramafic bodies in the western portion of the Wabigoon Subprovince. See Figure 5 for legend. The line separating sulphide-saturated from sulphide-undersaturated fields in the Pd versus Cu diagram is approximate (Vogel et al. 1999).

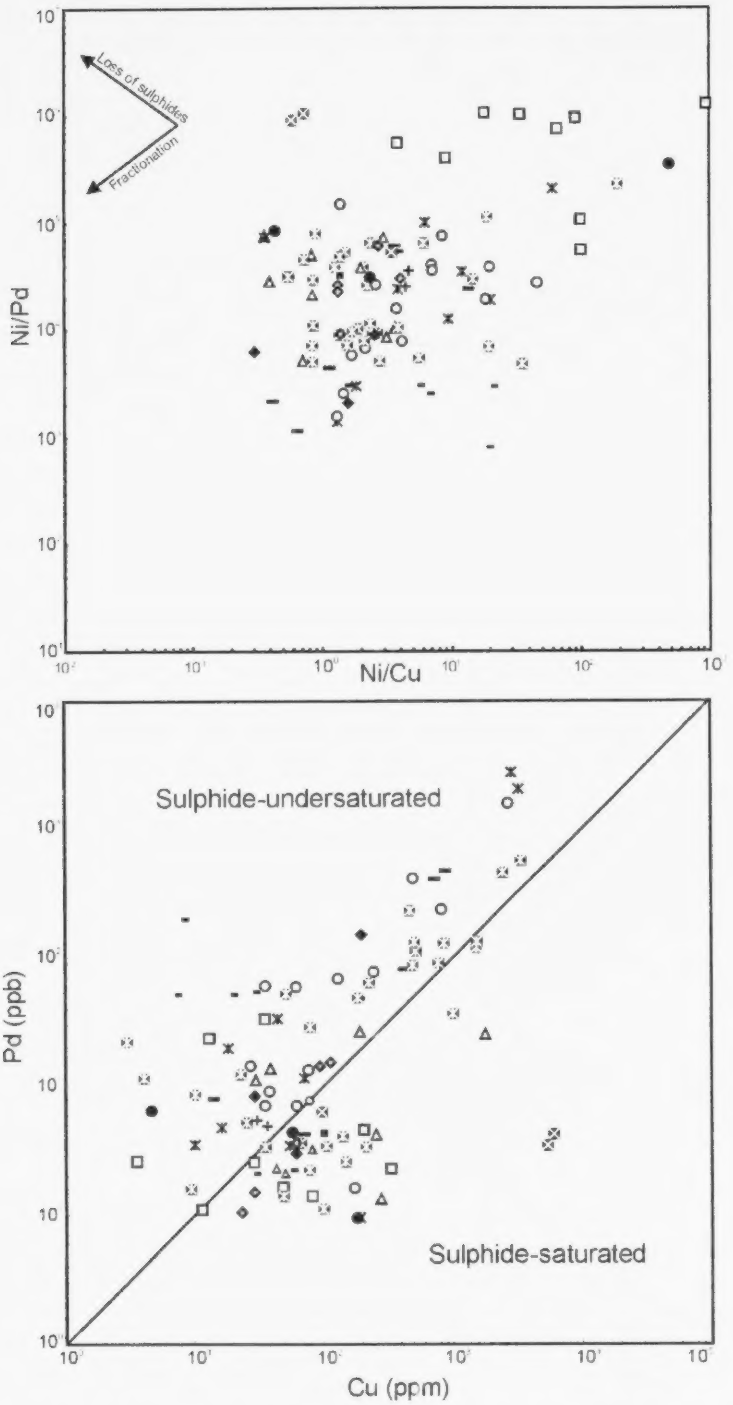

Figure 10. Ni/Pd versus Ni/Cu and Pd versus Cu diagrams of samples from mafic–ultramafic bodies in the eastern portion of the Wabigoon Subprovince. See Figure 6 for legend. The line separating sulphide-saturated from sulphide-undersaturated fields in the Pd versus Cu diagram is approximate (Vogel et al. 1999).

Summary and Discussion

Most of the studied synvolcanic intrusions in the Wabigoon Subprovince are tholeiitic (Kakagi Sills, Pipestone, Grassy Portage, Mountdew, Ruffo Lake, Marshall Lake), although two are calc-alkalic (Dobie and Lash-Carpenter). The magmatic affinity of the O'Sullivan intrusion is not clear, but it is likely tholeiitic. The Kakagi Sills and Pipestone and Ruffo Lake intrusions are interpreted to be derived from a depleted mantle source, contain both sulphide-undersaturated and sulphide-saturated phases, have generally high PGE contents (Appendix 3), and are relatively large, suggesting that they have moderate to excellent potential to host PGE mineralization. The magmatic affinities of the Grassy Portage and Mountdew intrusions are unclear, but both are interpreted to be derived from sulphide-saturated parent magmas. The Grassy Portage intrusion contains low abundances of PGEs, but contains local anomalously high PGE values (up to 47 ppb Pt+Pd). It is similar to the Junior Lake intrusion in some respects (similar lithologies, local vari-textured zones) and may therefore have some potential to host Type II mineralization. The Mountdew intrusion contains low abundances of PGEs, but it is well differentiated (Blackburn 1981), and may warrant further investigation.

The calc-alkalic, synvolcanic Dobie and Lash-Carpenter intrusions are interpreted to be derived from an enriched mantle source and are saturated in sulphide. The Dobie intrusion contains moderate to high abundances of PGEs (up to 52 ppb Pt+Pd), hosts small, low-grade Type II Ni-Cu showings (e.g., Emo prospect) with low PGE grades, and therefore contains high potential to host additional Ni-Cu-(PGE) mineralization. However, the small size of the Dobie intrusion may limit its potential to host large amounts of PGE mineralization. The Lash-Carpenter intrusion contains low abundances of PGEs and is interpreted to have lower potential to host PGE mineralization.

The synvolcanic to syn-tectonic intrusions are either tholeiitic (e.g., Kakagi Sills, Pipestone Lake, Mountdew) or have undetermined magmatic affinities (e.g., Crooked Green, Jacobus). Some of the tholeiitic magmas appear to have been derived from a depleted mantle source (e.g., Junior Lake, Jackson, and Caribou Stock) and some appear to have been derived from an enriched mantle source or from a depleted mantle source and were subsequently contaminated by continental crust (e.g., Gzowski, Toronto Lake). The Caribou and Junior Lake bodies are saturated in sulphide, however, the Junior Lake intrusion contains moderate abundances of PGEs (up to 676 ppb Pt+Pd) and Types I and II mineralization (Landore Resources Inc. property), whereas the Caribou stock contains low abundances of PGEs and is interpreted to be less favourable for PGE exploration. Given the chemical similarities, their apparently different potential for mineralization could be related to the nature of the host rocks (foliated granitoid rocks and gneisses to the south, and metavolcanic and metasedimentary rocks along the east and northeast sides at Caribou, compared to sulphide-facies iron formation at Junior Lake). It is also possible that the Caribou stock has lost PGE from segregation of a sulphide phase prior to emplacement. The Gzowski and Toronto Lake intrusions are saturated in sulphide and contain low abundances of PGEs, suggesting limited potential for large PGE deposits.

Three syn-tectonic intrusions occur along the margins of felsic batholiths: the Denmark, Mulcahy, and Nabish intrusions. All have tholeiitic affinities. The Denmark and Mulcahy intrusions appear to have been derived from a depleted mantle source, whereas the source region for the Nabish Lake intrusion is unclear from the data generated in this study. All are saturated in sulphide, however, there are strikingly different PGE abundances in the different intrusions. The Mulcahy intrusion contains generally low PGE abundances (with the exception of very local small anomalies), suggesting that it may have lost PGE during segregation of a sulphide phase. The Denmark and Nabish Lake intrusions are small, but have moderate abundances of PGEs and should have good potential for Type II mineralization, similar to the mineralization previously identified in the Denmark intrusion.

Four syn- to post-tectonic intrusions were sampled. The Roaring River Complex is calc-alkalic, and is interpreted to be saturated in sulphide and derived from an enriched mantle source. The mafic section of this intrusion has high PGE contents, but the volume of mafic phases is small, which may lower its economic potential. The Lower Caribou intrusion is alkalic, is interpreted to be derived from an enriched mantle source, and contains both sulphide-saturated and sulphide-undersaturated phases. The mafic parts of this intrusion contain moderate abundances of PGEs, but the volume of mafic phases is small. The Tib Lake and Buck Lake intrusions are part of the Lac des Iles suite of mafic–ultramafic intrusions (2692 Ma: D.W. Davis *in* Blackburn et al. 1991), which are hosted by gneissic tonalite-granodiorite. They are tholeiitic, are interpreted to be derived from an enriched mantle source, and contain both sulphide-saturated to sulphide-undersaturated phases. Both intrusions have generally high abundances of PGEs with moderate to high Pd/Pt ratios, which may reflect high PGE contents in the source region or introduction of PGEs in a hydrothermal/metamorphic fluid, similar to that proposed for the Lac des Iles deposit (Lavigne et al. 2002; Sutcliffe et al. 1989; Sweeny 1989; Brügmann et al. 1989).

The Chrome-Puddy Lake intrusion is composed of ultramafic rocks and hosts chromite deposits. It is tholeiitic and contains both sulphide-saturated and sulphide-undersaturated phases. Although there are chromitite seams in the intrusion, the PGE contents are uniformly low, suggesting that the intrusion has previously lost PGE through earlier sulphide saturation, which may limit its potential to form PGE-rich deposits.

The intrusions in the Wabigoon Subprovince that may have the greatest potential to host PGE deposits include the Buck Lake and Tib Lake intrusions, the Junior Lake intrusion, the Kakagi Sills, and the Pipestone Lake intrusion. The Jackson mafic–ultramafic body and the Grassy Portage intrusion, by analogy with the Junior Lake intrusion, may also warrant further investigation.

THE QUETICO SUBPROVINCE

Geological Background

The Quetico Subprovince is an east-northeast-trending, 10-100 km wide by 1200 km long belt of variably metamorphosed and deformed clastic metasedimentary rocks and granitoids located in the west-central part of the Superior Province (Figure 1; Stockwell et al. 1970; Blackburn and Mackasey 1977; Percival et al. 1985; Percival 1989). It is bordered to the north by the Wabigoon Subprovince, to the south by the Wawa Subprovince, and extends from the Trans-Hudson orogen in the southwest to the Opatica Subprovince in the east. The metamorphic grade varies from greenschist to amphibolite to local granulite facies (MacTavish 1999). The metasedimentary rocks were deposited before 2696 Ma (Davis and Corfu 1995).

The Quetico intrusions are typically small (<1 km^2) and form sills, plugs, and small stocks (MacTavish 1999) composed of a variety of lithologies, mainly wehrlites, clinopyroxenites, hornblendites, monzodiorites, syenites, foidites and silicocarbonatites (Lassen et al. 2001). They are locally enriched in Ni-Cu and PGEs.

Eleven mafic–ultramafic bodies in the Quetico Subprovince were sampled as part of this project (Table 7).

An Al-Fe+Ti-Mg cation plot and Pd versus Cu, Ni/Pd versus Ni/Cu, Ni/Pt versus Ni/Cu, and Pd/Pt versus Ni/Cu plots for the mafic–ultramafic bodies in the Quetico Subprovince are shown in Figures 11, 12 and 13.

Table 7. Characteristics of the mafic–ultramafic bodies in the Quetico Subprovince.

Location	Timing	Sulphide Saturation State	Magmatic Affinity	Source	Tectonic Setting	Mineralization Type
Abitibi Canyon-Pinard	ST-PT	SS	Fe-TH			Unknown
Abiwin	ST-PT	mostly SS	A	MM	?	I
Eva	ST-PT	mostly SS	A	MM	?	I
Kaweene	ST-PT	mostly SS	A	MM	?	I
McQuat	ST-PT	mostly SS	A	MM	?	Unknown
Mud	ST-PT	mostly SS	A	MM	?	I
Nickelbee	ST-PT	mostly SS	A	MM	?	Unknown
North Elbow	ST-PT	mostly SS	A	MM	?	Unknown
Nym	ST-PT	mostly SS	A	MM	?	I
Samuels	ST-PT	mostly SS	A	MM	?	I
South Elbow	ST-PT	mostly SS	A	MM	?	Unknown

Timing: PT = post-tectonic, ST = syn-tectonic; **Sulphide Saturation State**: SS = sulphide saturated; **Magmatic Affinity**: A = alkalic, Fe-TH = high Fe-tholeiitic; **Source**: MM = metasomatized mantle; ? = unclear or based on limited data.

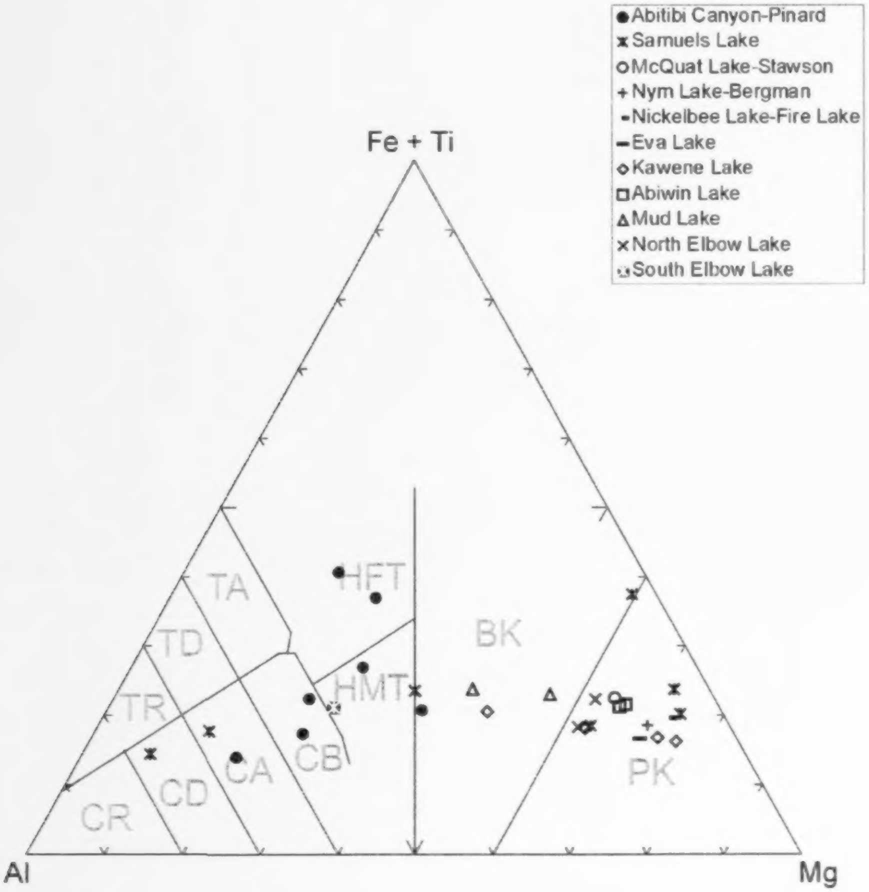

Figure 11. Al–Fe+Ti–Mg cation plot of samples from mafic–ultramafic bodies in the Quetico Subprovince. Fields from Jensen (1976). C = calc-alkalic, T = tholeiitic, K = komatiitic, P = picritic, R = rhyolite, D = dacite, A = andesite, B = basalt, HF = high Fe, HM = high Mg.

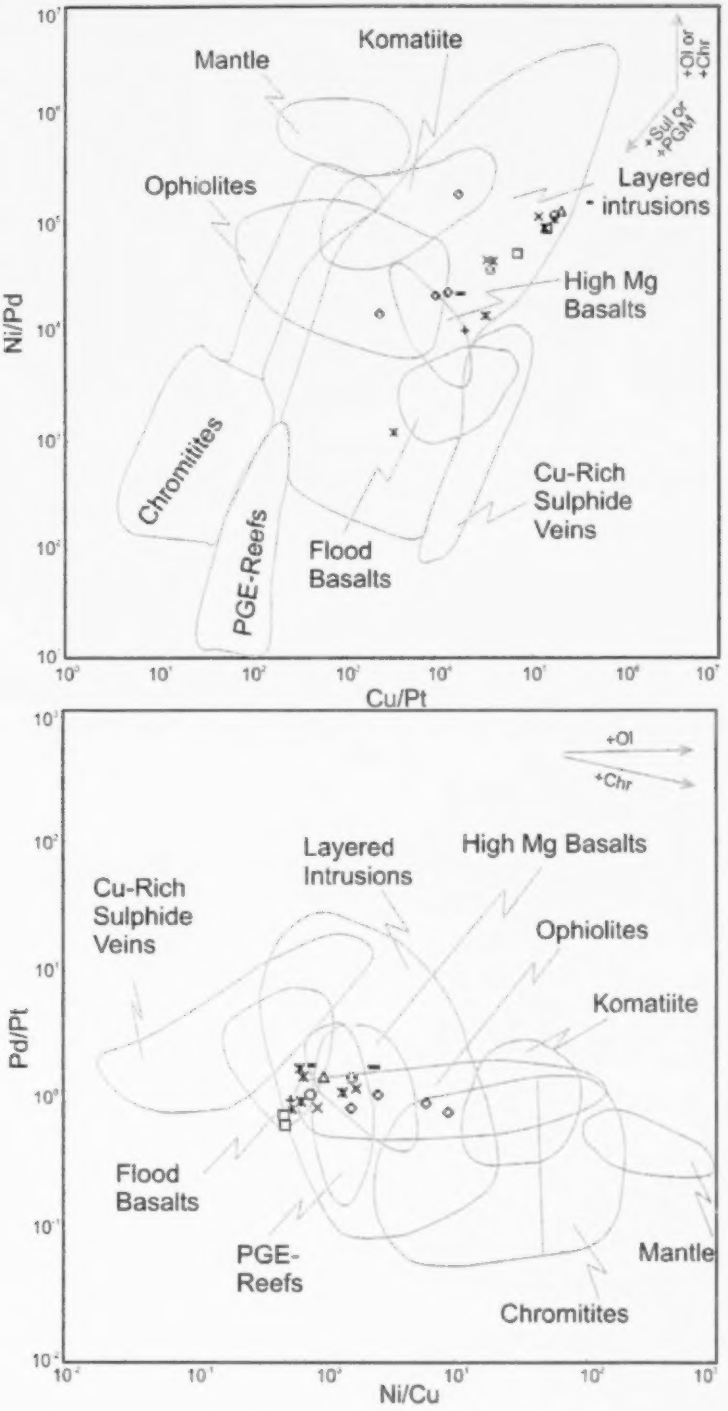

Figure 12. Ni/Pd versus Cu/Pt and Pd/Pt versus Ni/Cu diagrams of samples from mafic–ultramafic bodies in the Quetico Subprovince. Fields from Barnes (1990). Sul = sulphides, PGM = platinum group minerals, Ol = olivine, Chr = chromite. See Figure 11 for legend.

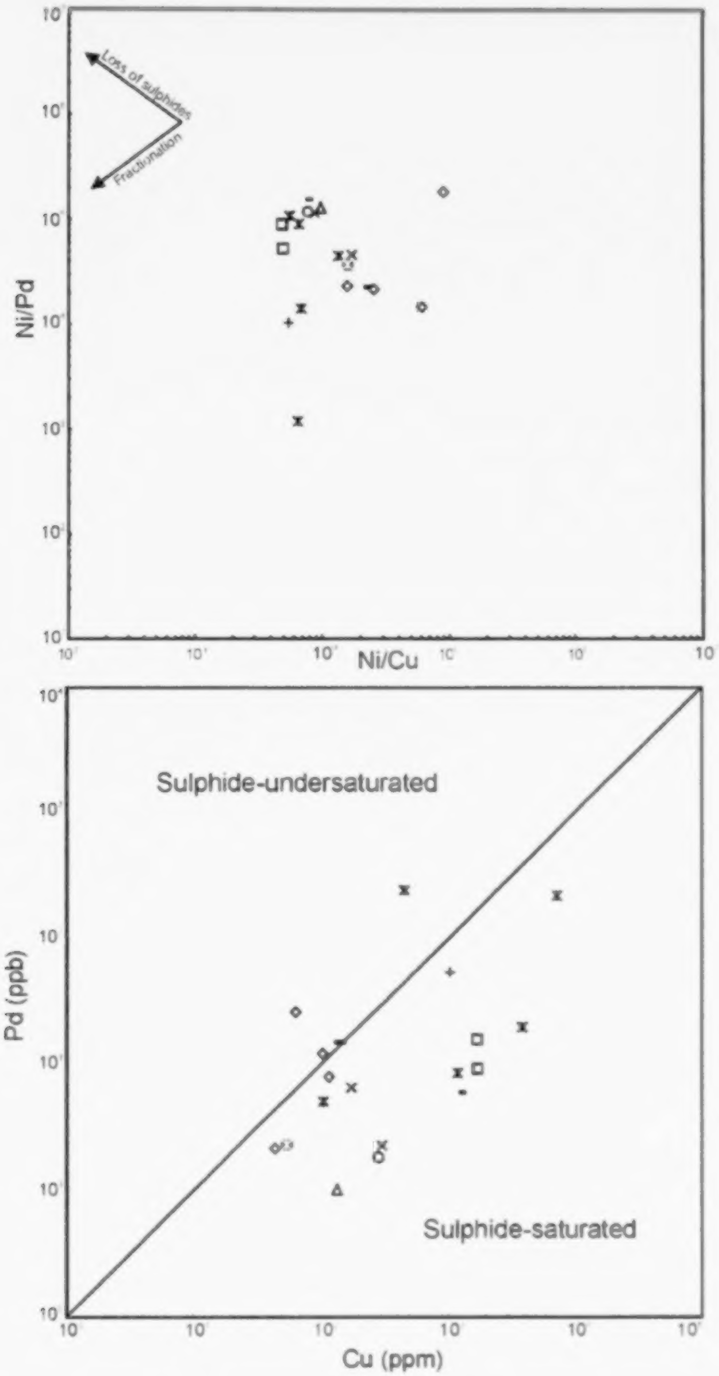

Figure 13. Ni/Pd versus Ni/Cu and Pd versus Cu diagrams of samples from mafic–ultramafic bodies in the Quetico Subprovince. See Figure 11 for legend. The line separating sulphide-saturated from sulphide-undersaturated fields in the Pd versus Cu diagram is approximate (Vogel et al. 1999).

Summary and Discussion

The syn- to post-tectonic Abitibi Canyon-Pinard intrusion, located in the eastern portion of the Quetico Subprovince, has a high-Fe tholeiitic magmatic affinity, a moderate Mg content, is saturated in sulphide, and is interpreted to be derived from a depleted mantle source. PGE abundances are uniformly at or below analytical detection limits, suggesting retention of sulphide phases in the source or loss of sulphide phases during ascent. Therefore, the potential for discovery of economic abundances of PGE mineralization in this intrusion appears to be limited.

All other mafic–ultramafic intrusions that were examined for this study in the western portion of the Quetico Subprovince are alkalic and the presence of primary amphibole and biotite in felsic and mafic rocks suggests hydrous parental magmas (Lassen et al. 2000). They are predominantly saturated in sulphide, and also exhibit anomalously high PGE contents, indicating that sulphides accumulated during crystallisation. Pd/Pt ratios are typically low (0.66 to 1.91), similar to magmatic values, suggesting limited redistribution of PGE by hydrothermal or metamorphic fluids. Many of the mafic–ultramafic intrusions in the Quetico Subprovince host Type I Ni-Cu-(PGE) and PGE mineralization. There are no clear geological or geochemical differences between mineralized and unmineralized intrusions, but the mineralized intrusions appear to have larger surface areas. Thus, it appears that all of the mafic–ultramafic intrusions in the Quetico Subprovince have the potential to host PGE mineralization. Larger intrusions should be investigated first, as they have a greater potential for containing economic abundances of PGEs.

THE WAWA SUBPROVINCE

Geological Background

The Wawa Subprovince is an east-northeast-trending, 10-200 km wide by 700 km long belt of metavolcanic rocks, metasedimentary rocks, and granitoids located in the south-central part of the Superior Province (Figure 1). It is bordered to the north by the Quetico subprovince, to the south by the Southern Province, and extends from the Abitibi Subprovince in the east to the Trans-Hudson Orogen in the west. The Wawa Subprovince is composed of two linear zones of greenstone belts (Williams et al. 1991), which represent 20-30% of the subprovince. One is located along the northern border with the Quetico Subprovince (Schreiber-Hemlo, Dayohessarah-Kabinakagami, Saganagons, Shebandowan and Manitouwadge-Hornepayne greenstone belts) and the other is located in the southeastern portion of the subprovince, in the vicinity of the town of Wawa (Mishibishu, Michipicoten and Gamitagama greenstone belts). The greenstone-rich zones are separated by felsic plutonic rocks (Williams et al. 1991), large areas of which have not been studied extensively. At least 3 stages of supracrustal development have been identified, one at 2.89 Ga, one at 2.75 Ga, and one at 2.70 Ga (Williams et al. 1991).

Ten intrusions in the Wawa Subprovince were sampled as part of this project (Table 8), including 3 synvolcanic mafic–ultramafic bodies (Shebandowan, Sun Rise Lake, White Lake) and 7 syn- to post-tectonic mafic–ultramafic bodies (Bulldozer, Shabotik, Moshkinabi, Haines Gabbro, Musher Lake, Pelletier, White River).

An Al-Fe+Ti-Mg cation plot and Pd versus Cu, Ni/Pd versus Ni/Cu, Ni/Pt versus Ni/Cu, and Pd/Pt versus Ni/Cu plots for the mafic–ultramafic bodies in the Wawa Subprovince are shown in Figures 14, 15 and 16.

Table 8. Characteristics of the mafic–ultramafic bodies in the Wawa Subprovince.

Location	Timing	Sulphide Saturation State	Magmatic Affinity	Source	Tectonic Setting	Mineralization Type
Bulldozer	ST to PT	SS	TH			I and V
Haines	SV	SS	TH	MM?	RA?	VIc and V
Moshkinabi	ST to PT	SS and SU	TH	DM?		III
Musher Lake	ST to PT	SS	CA	MM?	CM	Unknown
Pelletier	SV?	SS				Unknown
Shabotik	ST to PT	SS	TH			I and V
Shebandowan	SV	SS	TH	DM	CM-RA	I
Sun Rise Lake	SV?	SS and SU	Fe-TH	DM?	RA	I
White Lake	ST	SS	TH			Unknown
White River	ST to PT	SS	TH			Unknown

Timing: PT = post-tectonic, ST = syn-tectonic, SV = synvolcanic; **Sulphide Saturation State**: SS = sulphide saturated, SU = sulphide undersaturated; **Magmatic Affinity**: CA = calc-alkalic, Fe-TH = high Fe-tholeiitic, TH = tholeiitic; **Source**: DM = depleted mantle, MM = metasomatized mantle; **Tectonic Setting**: CM = convergent margin, RA = rifted arc; ? = unclear or based on limited data.

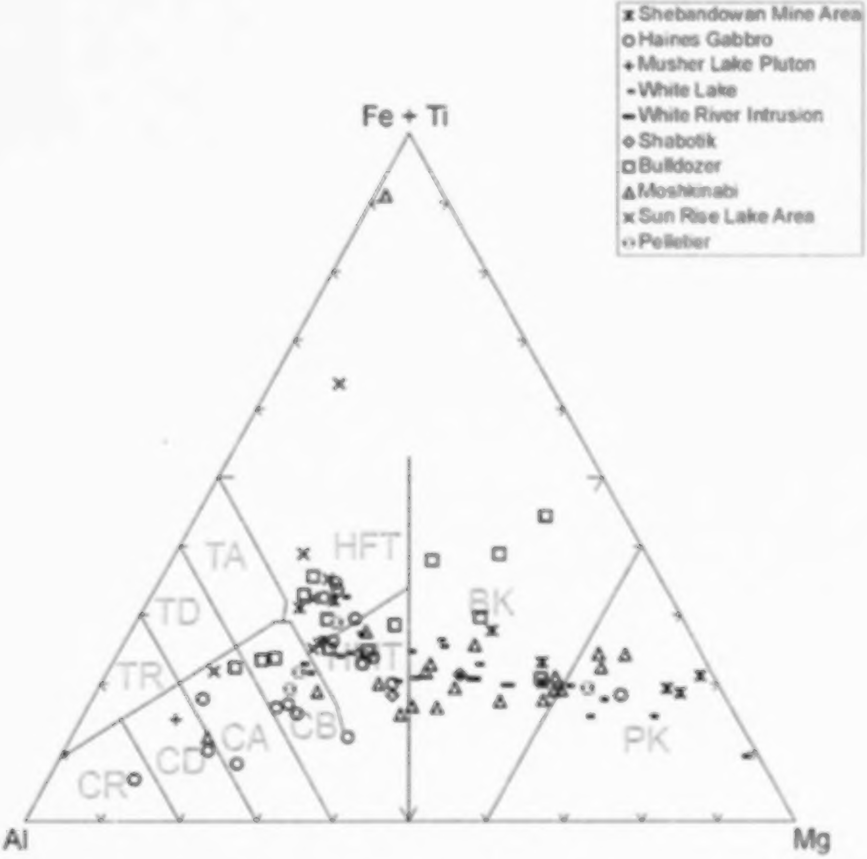

Figure 14. Al–Fe+Ti–Mg cation plot of samples from mafic–ultramafic bodies in the Wawa Subprovince. Fields from Jensen (1976). C = calc-alkalic, T = tholeiitic, K = komatiitic, P = picritic, R = rhyolite, D = dacite, A = andesite, B = basalt, HF = high Fe, HM = high Mg.

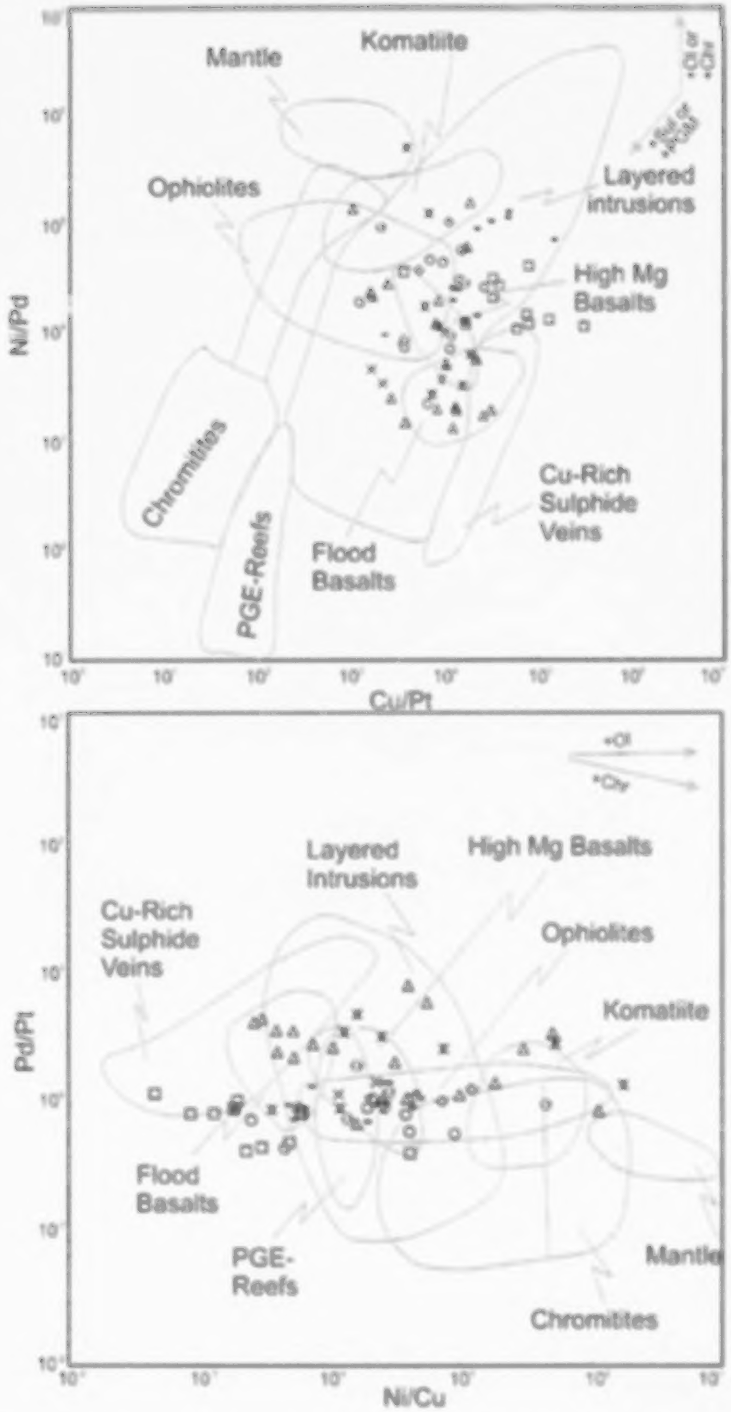

Figure 15. Ni/Pd versus Cu/Pt and Pd/Pt versus Ni/Cu diagrams of samples from mafic–ultramafic bodies in the Wawa Subprovince. Fields from Barnes (1990). Sul = sulphides, PGM = platinum group minerals, Ol = olivine, Chr = chromite. See Figure 14 for legend.

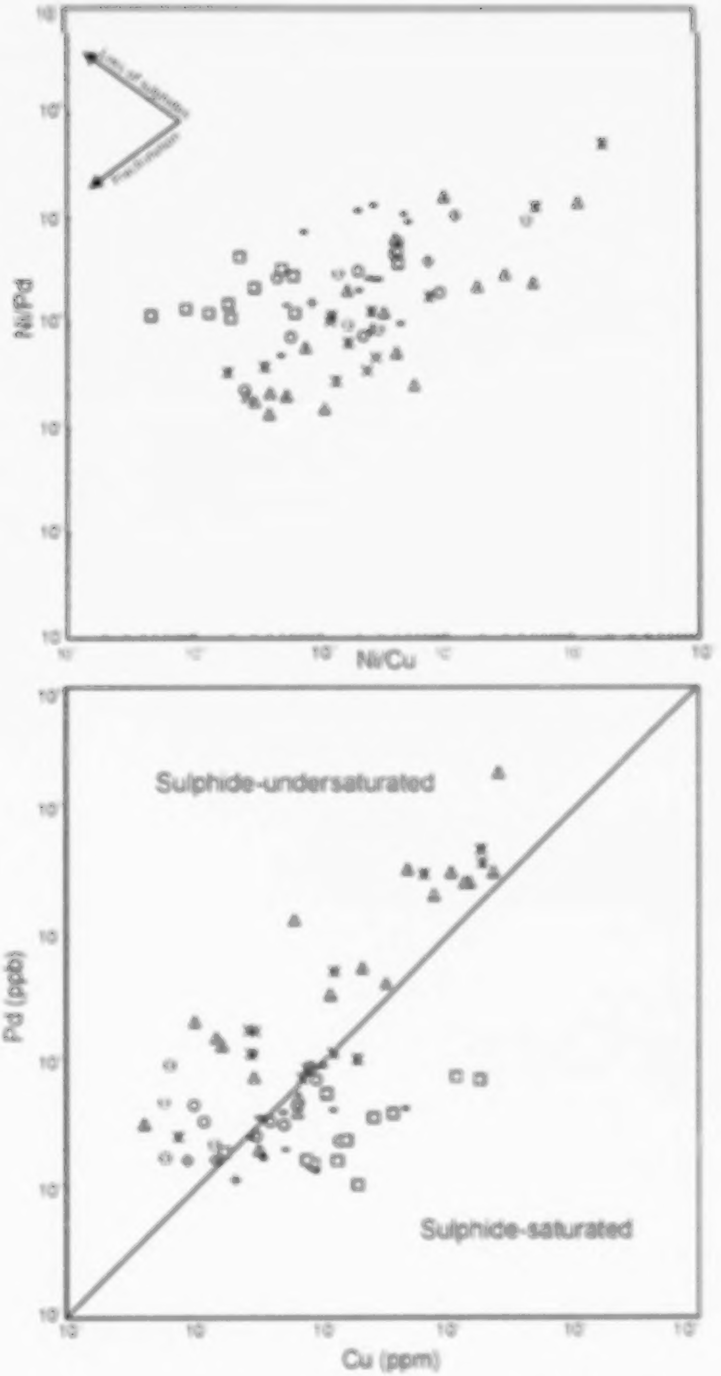

Figure 16. Ni/Pd versus Ni/Cu and Pd versus Cu diagrams of samples from mafic–ultramafic bodies in the Wawa Subprovince. See Figure 14 for legend. The line separating sulphide-saturated from sulphide-undersaturated fields in the Pd versus Cu diagram is approximate (Vogel et al. 1999).

Summary and Discussion

All of the synvolcanic mafic–ultramafic bodies in the Wawa Subprovince that were included in this study, with the exception of the Pelletier intrusion, are tholeiitic (Shebandowan, Haines, Sunrise Lake, White Lake, Shabotik, Moshkinabi). The Shebandowan and Sunrise Lake intrusions appear to have been derived from a depleted mantle source, whereas the White Lake and Haines intrusions appear to have been derived from an enriched mantle source or from a depleted mantle source and were subsequently contaminated by continental crust. The sulphide saturation histories are variable. The Shebandowan, Haines, and White Lake intrusions contain primarily sulphide-saturated rocks, whereas the Sunrise Lake intrusion contains both sulphide-undersaturated and sulphide-saturated phases. The White Lake and Sunrise Lake intrusions contain low to moderate abundances of PGEs. However, the higher values are associated with PGE-poor semi-massive to massive Fe-Ni-Cu sulphides, which suggests that they equilibrated with small amounts of magma and that their potential to contain economic concentrations of PGE is poor. However, the White Lake intrusion does have potential for Ni mineralization, as Ni is much less sensitive to variations in the amount of magma in the system than PGEs. The Shebandowan and Haines mafic–ultramafic bodies contain moderate to high abundances of PGEs and the Shebandowan intrusion hosts the Shebandowan Cu-Ni-PGE deposit, which is classified as Type I mineralization. Platinum group minerals have been identified in the Haines intrusion (Farrow 1995) and it is possible that the intrusion may contain Types I, II, or III mineralization.

The magmatic affinity of the Pelletier intrusion is unclear. It is saturated in sulphide, but contains moderate abundances of PGE. The intrusion appears to be small and it is very deformed. There is very little outcrop in the area and no conclusion can be safely made about the potential of this intrusion to host PGE mineralization with the data at hand.

Some of the syn- to post-tectonic intrusions in the Wawa Subprovince are tholeiitic (Bulldozer, Shabotik, Moshkinabi, and White River intrusions) and some are calc-alkalic (Musher Lake). Some of the tholeiitic magmas appear to have formed from a depleted mantle source (Moshkinabi) and some appear to have been derived from an enriched mantle source or from a depleted mantle source and were subsequently contaminated by continental crust (Bulldozer and White River). The intrusions with enriched or contaminated trace element geochemical signatures (Bulldozer and White River) are saturated in sulphide and the Bulldozer intrusion hosts very low-grade Types I and V mineralization. It is possible that the White River intrusion contains similar or higher-grade mineralization. In contrast, the intrusion with a depleted trace element signature (Moshkinabi) contains both sulphide-undersaturated and sulphide-saturated phases and contains generally high abundances of PGEs and locally highly anomalous values. Thus, the other tholeiitic, depleted, sulphide-undersaturated to sulphide-saturated intrusions in the Wawa Subprovince warrant further study.

The calc-alkalic Musher Lake Pluton has PGE contents below detection limits and is saturated in sulphide, suggesting that it is very unlikely to contain economic PGE mineralization.

THE ABITIBI SUBPROVINCE

Geological Background

The Abitibi Subprovince is a northeast-trending, approximately 100-250 km wide by 500 km long belt of metavolcanic rocks, metasedimentary rocks, and granitoids located in the southeastern part of the Superior Province (Figure 1). It is bordered to the northwest by the Kapuskasing Structural Zone, to the south and east by the Paleoproterozoic Huronian Supergroup and the Neoarchean Pontiac Subprovince, and to the north by the Neoarchean Opatica Subprovince.

The Abitibi Subprovince includes several greenstone belts and associated younger granitoid bodies. The greenstone belts are composed of abundant metavolcanic and metasedimentary rocks, abundant synvolcanic peridotitic to granodioritic intrusions, and local komatiite flows/sills. Most of the mafic–ultramafic bodies are hosted within the greenstone belts; only extremely rare mafic–ultramafic plugs/bodies are present in the granitoids. The metamorphic grades in the greenstone belts are predominantly sub-greenschist to greenschist facies, rising to amphibolite grade along the margins of intrusive complexes. The greenstone belts appear to have developed between 2750 and 2675 Ma (Ayer et al. 2002).

Nineteen mafic–ultramafic bodies in the Abitibi Subprovince were sampled as part of this project (Table 9), including 15 in the Abitibi greenstone belt, 3 in the Temagami greenstone belt and 1 in the Swayze greenstone belt.

An Al-Fe+Ti-Mg cation plot and Pd versus Cu, Ni/Pd versus Ni/Cu, Ni/Pt versus Ni/Cu, and Pd/Pt versus Ni/Cu plots for the mafic–ultramafic bodies in the Abitibi Subprovince are shown in Figures 17, 18 and 19.

Table 9. Characteristics of the mafic–ultramafic bodies in the Abitibi Subprovince.

Location	Timing	Sulphide Saturation State	Magmatic Affinity	Source	Tectonic Setting	Mineralization Type
Centre Hill	SV	SS to SU	TH	DM	RA	II
Copperfields	ST-PT	SS	TH		RA	I and V
Cunningham	SV	SS	Fe-TH	DM	RA	Unknown
Dundonald	SV	SS to SU	Mg-TH	DM	RA	II
Garrison	SV	SS to SU	Mg-TH Fe-TH	DM	RA	Unknown
Ghost Range	SV	SU	Fe-TH	DM	RA	Unknown
James Lake Dike	PT	SU?	TH	DM	RA?	I
James Lake Gabbro	SV to ST	SU and SS	TH	DM	RA	Unknown
Kamiskotia	SV to PV	SS	TH	DM	RA	Unknown
Lake Abitibi	ST to PT	SS	TH	DM	CM	Unknown
Loveland	ST?	SS	Mg-TH Fe-TH	DM to MM	RA	I
Mann	SV	SS to SU	Mg-TH Fe-TH	DM	RA	II
Montcalm	SV	SS	TH	DM to MM	RA	I
Munro	SV	SS to SU	Fe-TH	DM	RA	Unknown
Muskasenda Lake	SV	SS	Fe-TH	DM	RA	Unknown
Nordica	ST?	SU	TH	DM	RA	II
Otto	PT	SS	A	MM	RA	Unknown
Sothman	SV	SU	KB	DM	RA	I
Tisdale	SV?	SS			RA	Unknown

Timing: PT = post-tectonic, PV = post-volcanic, ST = syn-tectonic, SV = synvolcanic; **Sulphide Saturation State**: SS = sulphide saturated, SU = sulphide undersaturated; **Magmatic Affinity**: A = alkalic, Fe-TH = high Fe-tholeiitic, KB = komatiitic basaltic, Mg-TH = high Mg-tholeiitic, TH = tholeiitic; **Source**: DM = depleted mantle, MM = metasomatized mantle; **Tectonic Setting**: CM = convergent margin, RA = rifted arc; ? = unclear or based on limited data.

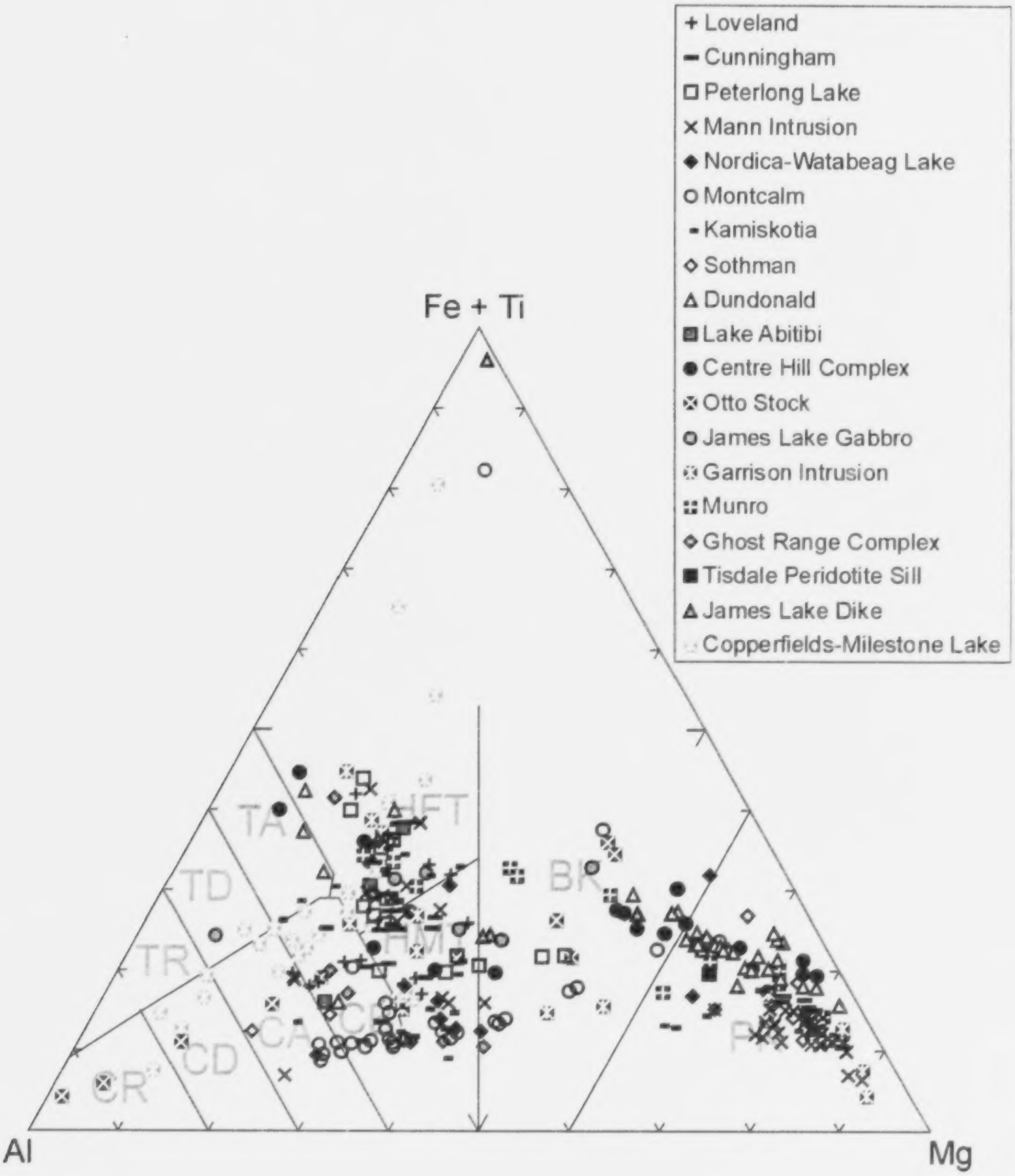

Figure 17. Al–Fe+Ti–Mg cation plot of samples from mafic–ultramafic bodies in the Abitibi Subprovince. Fields from Jensen (1976). C = calc-alkalic, T = tholeiitic, K = komatiitic, P = picritic, R = rhyolite, D = dacite, A = andesite, B = basalt, HF = high Fe, HM = high Mg.

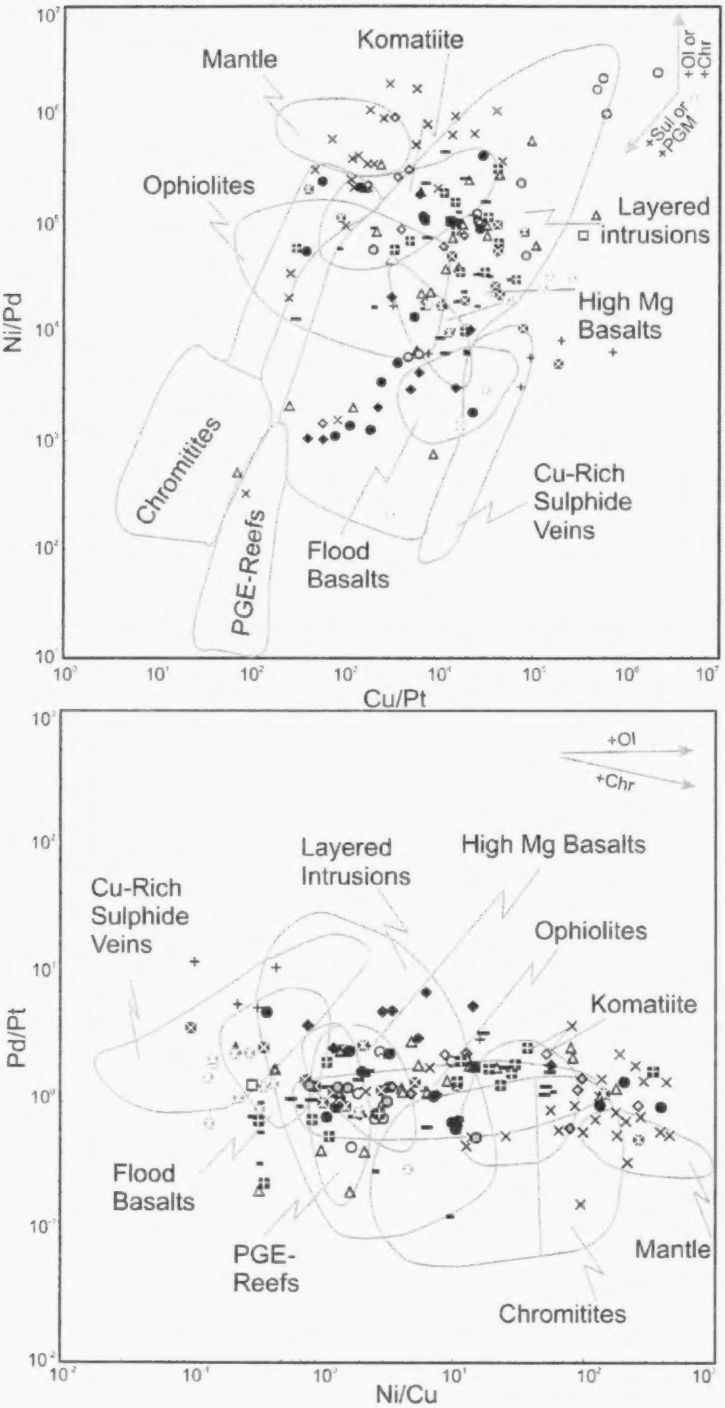

Figure 18. Ni/Pd versus Cu/Pt and Pd/Pt versus Ni/Cu diagrams of samples from mafic–ultramafic bodies in the Abitibi Subprovince. Fields from Barnes (1990). Sul = sulphides, PGM = platinum group minerals, Ol = olivine, Chr = chromite. See Figure 17 for legend.

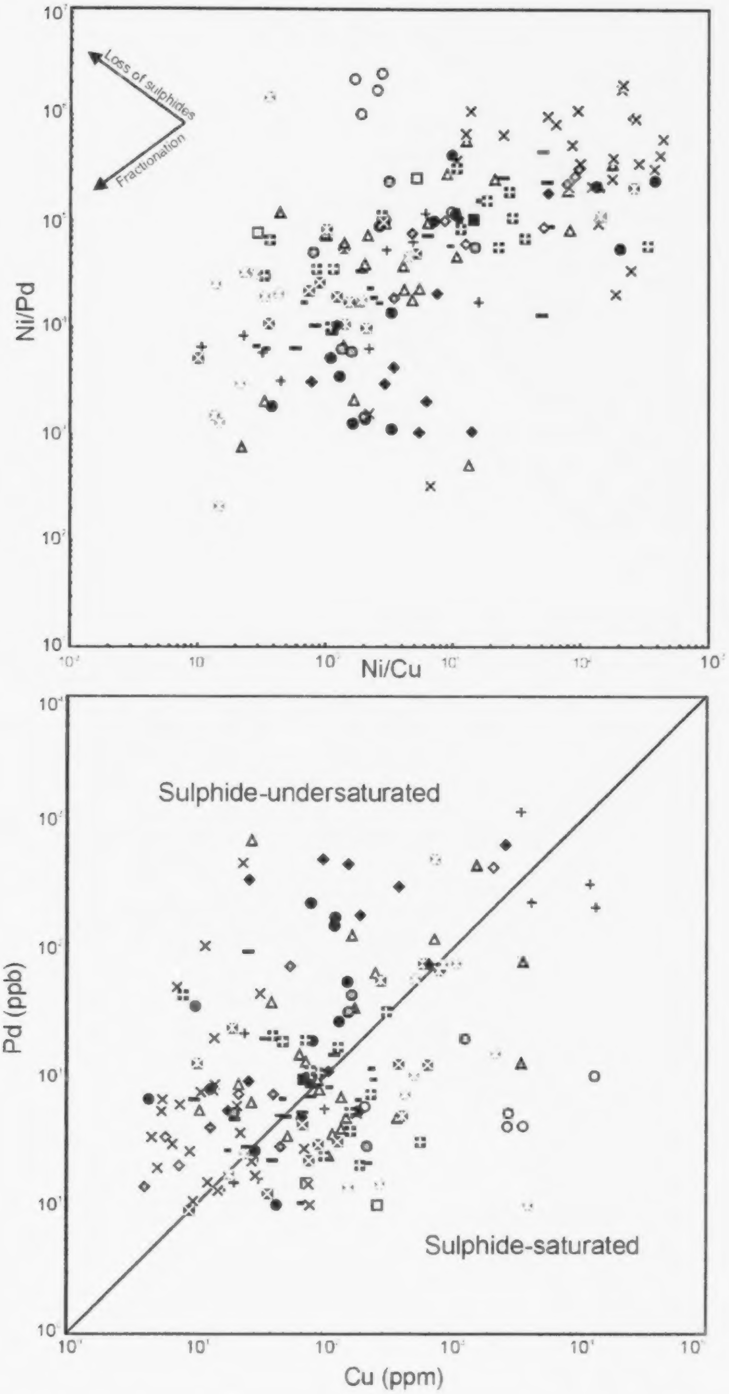

Figure 19. Ni/Pd versus Ni/Cu and Pd versus Cu diagrams of samples from mafic–ultramafic bodies in the Abitibi Subprovince. See Figure 17 for legend. The line separating sulphide-saturated from sulphide-undersaturated fields in the Pd versus Cu diagram is approximate (Vogel et al. 1999).

Summary and Discussion

The majority of the intrusions in the Abitibi Subprovince investigated in this project are synvolcanic. Most have tholeiitic magmatic affinities (including high-Fe to high-Mg compositions). The majority of the tholeiitic, synvolcanic intrusions are interpreted to be derived from a depleted mantle source (e.g., Cunningham, Garrison, Ghost Mountain, Munro, Nordica, Mann, Dundonald, and Centre Hill). The Montcalm intrusion is interpreted to be derived from a slightly enriched mantle source or from a depleted mantle source and was subsequently contaminated by small amounts of continental crust (Barrie et al. 1990). The source region of the Copperfield intrusion is unclear from the data generated through this study.

The synvolcanic tholeiitic intrusions exhibit a range of sulphide saturation histories. The Copperfields and Cunningham intrusions are saturated in sulphide, whereas the Montcalm, Garrison, Ghost Range, Munro, Nordica, Mann, Dundonald, and Centre Hill intrusions contain sulphide-undersaturated and sulphide-saturated phases. All have generally high abundances of PGEs. Pd/Pt ratios are typically low, except for some sections of the Copperfields intrusion, suggesting limited redistribution of PGE by hydrothermal/metamorphic fluids. The high PGE abundances, even in sulphide-saturated intrusions, suggest that PGEs have not been lost from the magma by segregation of a sulphide phase. These data suggest that the tholeiitic, sulphide-undersaturated to sulphide-saturated intrusions in the Abitibi Subprovince all have potential to host Types I, II, and/or III mineralization.

No significant PGE values were obtained in this study from the alkalic Otto Stock. However, Berger (2001) reported values of 164 ppb Pd and 55 ppb Pt from a hornblendite. The mafic and ultramafic phases of this intrusion are volumetrically minor, suggesting that the potential for PGE mineralization is limited. Nevertheless, this type of association (mafic phases of an alkaline complex) should not be ignored in the Abitibi Subprovince, as it is similar to significant PGE occurrences in the Coldwell Complex near Marathon and less significant albeit conceptually important occurrences in the Killala Complex, both of which contain relatively large volumes of mafic material. Thus, exploration for PGE in other alkalic intrusive complexes should focus on those that contain higher proportions of mafic phases. Alkalic complexes containing significant mafic components have not been recognized in the Abitibi Subprovince to date. However, mafic rocks in complexes of this type are commonly more susceptible to weathering, so integrated mapping and geophysical studies may be required to find them.

The single syn- to post-tectonic mafic intrusion studied in the Abitibi Subprovince (Lake Abitibi intrusion) has a high-Fe tholeiitic magmatic affinity, is saturated in sulphide, and has PGE abundances that are *uniformly* near or below analytical detection limits. It is small and is interpreted to have little potential to host PGE mineralization. Thus, even if more intrusions of this type were discovered through more detailed mapping or application of geophysical techniques in areas of limited outcrop, based on what is currently known of this type of intrusion, we do not believe that they represent prime exploration targets for PGE mineralization.

In summary, the synvolcanic tholeiitic intrusions in the Abitibi Subprovince appear to have the best potential for PGE mineralization. Sulphide-saturated intrusions should be examined for Types II or III mineralization, whereas intrusions containing both sulphide-undersaturated and sulphide-saturated phases should be examined for Types I, II, and/or III mineralization.

PROTEROZOIC ROCKS

Geological Background

Paleoproterozoic rocks in Ontario include the Huronian Supergroup (from 2.5 to 2.2 Ga), which extends from the eastern shore of Lake Huron to Sudbury and northward to Noranda (Figure 1; Bennett et al. 1991). This region was deformed during the approximately 1.8 Ga Penokean Orogeny (Bennett et al. 1991).

Mesoproterozoic rocks are only present in the Lake Superior region of Ontario, as part of the Midcontinent Rift, which comprises up to 30 km of rift-related sediments and basalts (Sutcliffe 1991). Related intrusive rocks include layered plutons, diabase sills and dike swarms, and mafic to felsic ring complexes (Sutcliffe 1991; Osmani 1991). Rifting also produced alkalic complexes along the Kapuskasing Structural Zone (Sage 1991). There are numerous Ni-Cu-(PGE) and PGE-(Cu)-(Ni) occurrences (mainly Type I mineralization) in the Nipissing Gabbro suite (see review by James et al. 2002).

Three Paleoproterozoic intrusions, all in the Nipissing diabase suite, and 6 Mesoproterozoic intrusions, including 3 mafic–ultramafic intrusions, 1 sill suite, and 2 alkalic complexes, were sampled as part of this project (Table 10).

An Al-Fe+Ti-Mg cation plot and Pd versus Cu, Ni/Pd versus Ni/Cu, Ni/Pt versus Ni/Cu, and Pd/Pt versus Ni/Cu plots for the Proterozoic mafic–ultramafic bodies are shown in Figures 20, 21 and 22.

Table 10. Characteristics of the Proterozoic mafic–ultramafic bodies.

Location	Timing	Sulphide Saturation State	Magmatic Affinity	Source	Tectonic Setting	Mineralization Type
Coldwell	ST	SS to SU	A	MM	CR	II/IV and III
Crystal Lake	ST	SS	TH	MM or DM	CR	I
Hele Township	ST	SS to SU	TH	MM or CM	CR	Unknown
Killala Lake	ST	SS	A	MM	CR	I
Logan sills		SS	Fe-TH	DM	CR	Unknown
Nipissing Bruce	ST	SS	TH	DM to MM	CR	Unknown
Nipissing Karalash	ST	SS	TH	DM to MM	CR	Unknown
Nipissing Rose	ST	SS	TH	DM to MM	CR	Unknown
Seagull	ST	SS	TH	MM or CM	CR	I

Timing: ST = syn-tectonic; **Sulphide Saturation State**: SS = sulphide saturated, SU = sulphide undersaturated; **Magmatic Affinity**: A = alkalic, Fe-TH = high Fe-tholeiitic, TH = tholeiitic; **Source**: CM = contaminated mantle, DM = depleted mantle, MM = metasomatized mantle; **Tectonic Setting**: CM = convergent margin, CR = continental rift, RA = rifted arc; ? = unclear or based on limited data.

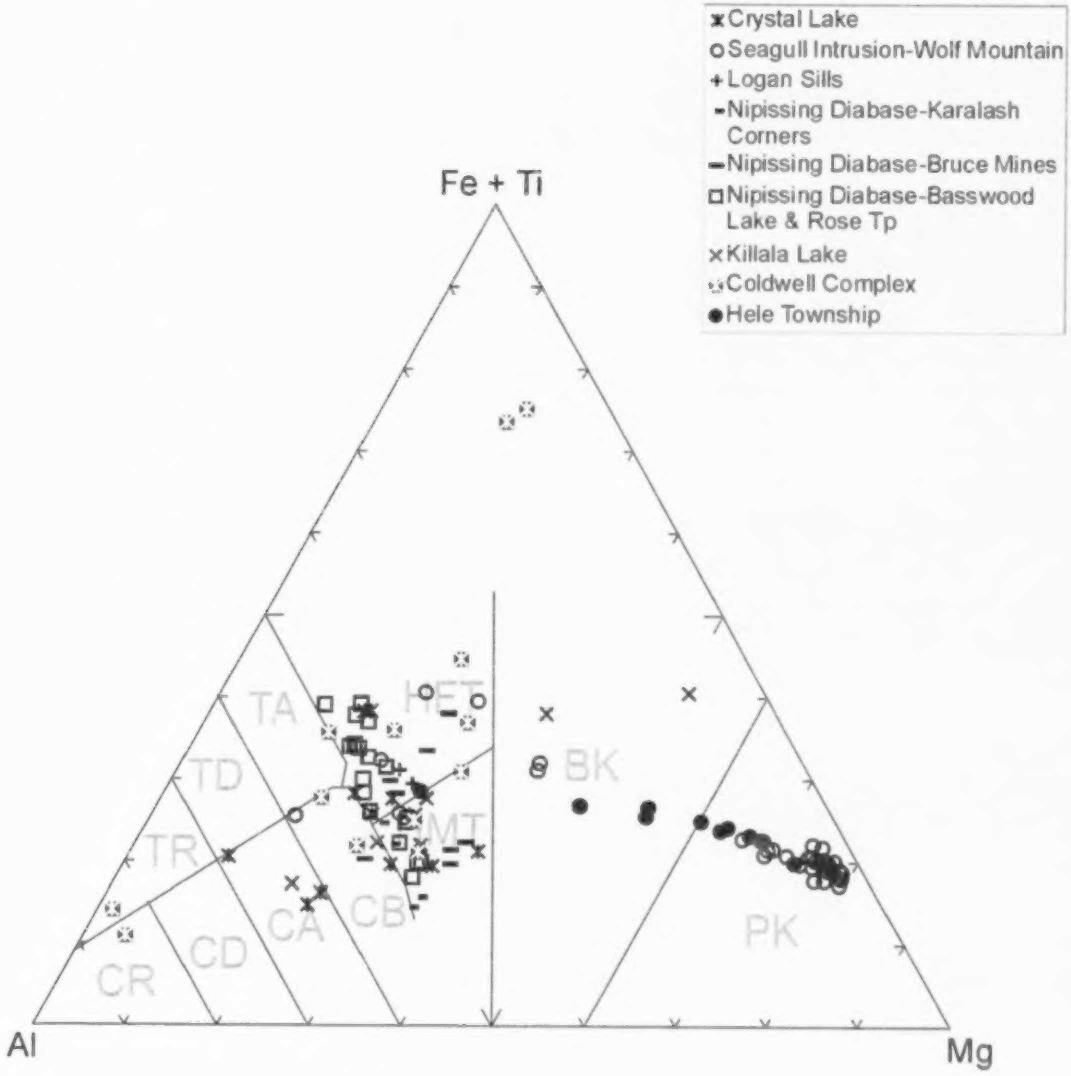

Figure 20. Al–Fe+Ti–Mg cation plot of samples from Proterozoic mafic–ultramafic bodies. Fields from Jensen (1976). C = calc-alkalic, T = tholeiitic, K = komatiitic, P = picritic, R = rhyolite, D = dacite, A = andesite, B = basalt, HF = high Fe, HM = high Mg.

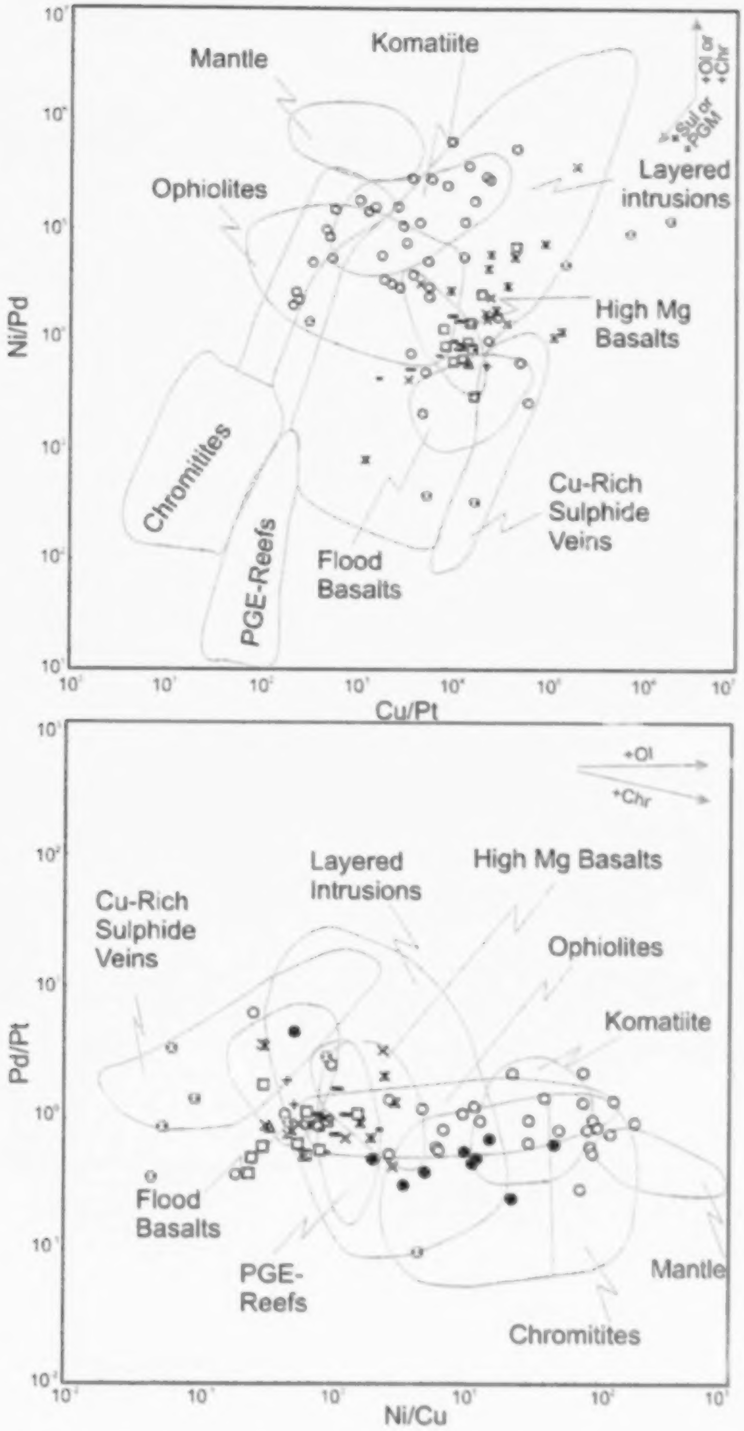

Figure 21. Ni/Pd versus Cu/Pt and Pd/Pt versus Ni/Cu diagrams of samples from Proterozoic mafic–ultramafic bodies. Fields from Barnes (1990). Sul = sulphides, PGM = platinum group minerals, Ol = olivine, Chr = chromite. See Figure 20 for legend.

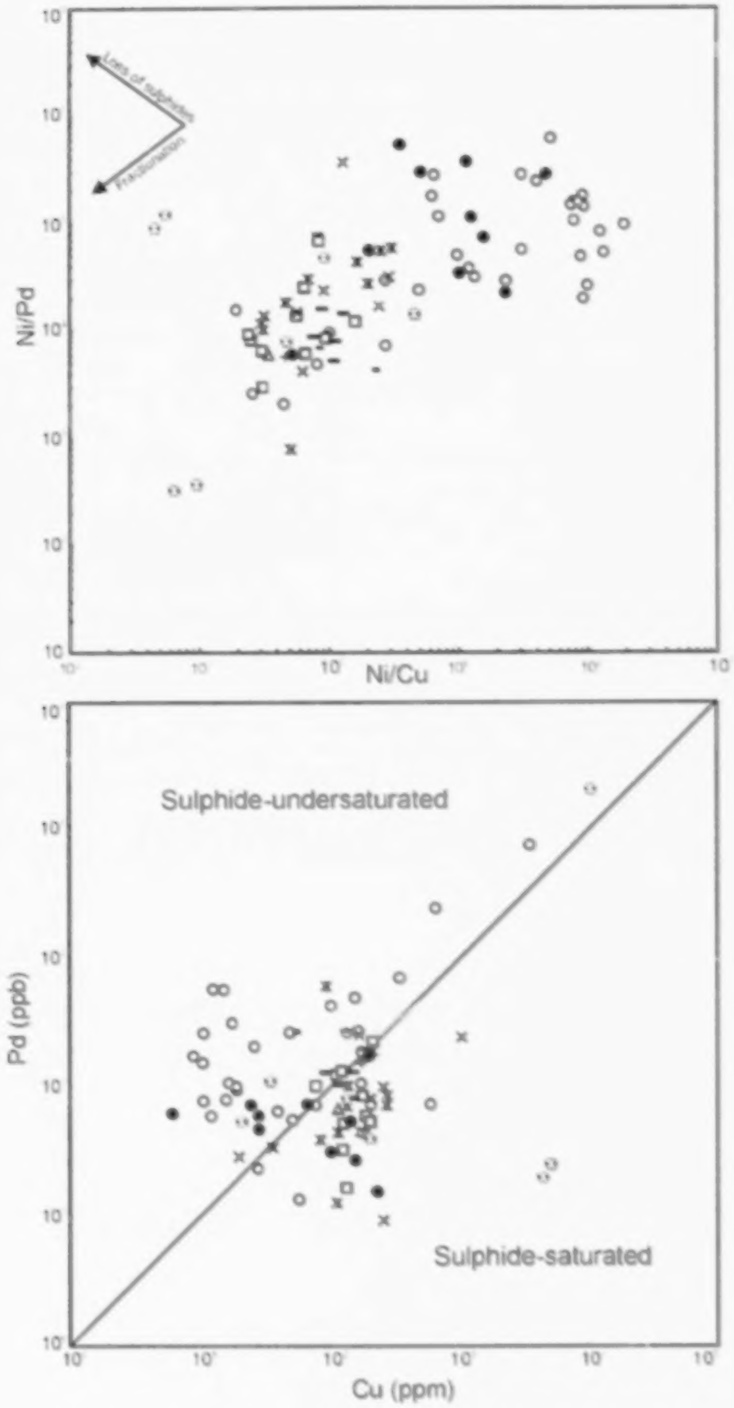

Figure 22. Ni/Pd versus Ni/Cu and Pd versus Cu diagrams of samples from Proterozoic mafic–ultramafic bodies. See Figure 20 for legend. The line separating sulphide-saturated from sulphide-undersaturated fields in the Pd versus Cu diagram is approximate (Vogel et al. 1999).

Summary and Discussion

The three mafic–ultramafic intrusions in the Paleoproterozoic Nipissing diabase suite that were sampled have tholeiitic magmatic affinities and appear to be derived from a slightly enriched mantle source or from a depleted mantle source and were subsequently contaminated by small amounts of continental crust. All appear to be saturated in sulphide and the Pd/Pt ratios are near unity, suggesting little modification by hydrothermal/magmatic processes. All have moderate to high abundances of PGEs and are interpreted to have a moderate potential for PGE mineralization. Although the individual intrusions are commonly small, they are part of a much larger magmatic system and therefore have greater potential for mineralization than individual small intrusions. Several different models have been proposed for the tectonic setting and the source of the Nipissing intrusions (e.g., Lightfoot et al. 1987; Bennett 1997; Fahrig 1987; Buchan et al. 1998), but most involve plume-related magmatism, which involves high degrees of partial melting, and interpretations of a large-scale feeder system to overlying flood basalts, which would make them a favourable environment in which to generate PGE and Ni-Cu-(PGE) deposits (see Naldrett 1989).

All three Mesoproterozoic mafic–ultramafic intrusions have tholeiitic affinities. The Seagull and Crystal Lake intrusions (which contain Type I mineralization) and the Hele Township intrusion appear to be derived from a slightly enriched mantle source or from a depleted mantle source and were subsequently contaminated by small amounts of continental crust. Some of the intrusions are undersaturated in sulphide (Seagull), some contain both sulphide-undersaturated and sulphide-saturated phases (Crystal Lake), and some are saturated in sulphide (Hele Township intrusion). All contain moderate to high abundances of PGEs (typically >20 ppb Pt+Pd), which suggests that they have high potential to contain PGE mineralization, especially the Crystal Lake intrusion, which appears to have achieved sulphide saturation during crystallization. The small sizes of some intrusions, like the one in Hele Township, may limit their potential to contain economic abundances of Type III (reef-type) mineralization, but the evidence that they achieved sulphide saturation may make them prospective for Type I mineralization.

The Mesoarchean rift-related Killala and Coldwell alkalic complexes contain Ni-Cu-(PGE) and PGE mineralization in subordinate mafic–ultramafic rocks, typically located along the margins of the intrusions. The Killala intrusion contains Type I mineralization. The Coldwell complex contains Type III PGE mineralization (Skipper Lake Zone) in the northern part, associated with a magnetite-rich horizon, and Type II/IVc mineralization (Bermuda showing) along the eastern margin, associated with a specific gabbroic lithology, which shows evidence of PGE and Cu enrichment by interaction of primary igneous minerals with hydrous fluids (Watkinson and Ohnenstetter 1992). As mentioned previously, Types II, III, and IV mineralization are not mutually exclusive and in this case, the Coldwell Complex appears to contain several types. The Coldwell and Killala complexes appear to be derived from a metasomatically-enriched mantle source. The Killala intrusion contains mainly sulphide-saturated rocks, whereas the Coldwell intrusion contains both sulphide-saturated and sulphide-undersaturated phases, which is consistent with the presence of Type III (reef-type) mineralization in the Coldwell complex. The larger amount of mafic lithologies in the Coldwell complex relative to the Killala complex is also consistent with the presence of Type III mineralization. Both intrusions have low abundances of PGE in the intermediate phases of the intrusions, but high abundances of PGEs in the mafic to ultramafic phases of the intrusions. Pd/Pt ratios are low to intermediate. These alkalic intrusions have demonstrated potential to form PGE mineralization and based on what we currently know about their mineralization styles, exploration on alkalic complexes should focus on those that contain the largest relative amounts of mafic–ultramafic rocks.

In summary, the Proterozoic intrusions are characterized by high abundances of PGEs and have excellent potential to contain economic abundances of PGE mineralization. Smaller intrusions should be examined for Types I and II PGE or Ni-Cu-(PGE) mineralization, whereas larger intrusions should also be examined for Types III or IVc PGE-mineralization, particularly those containing both sulphide-undersaturated and sulphide-saturated phases (i.e., Coldwell and Seagull). Intrusions that are saturated in sulphide (e.g., Hele) should also be examined for the Ni potential.

THE GRENVILLE PROVINCE

Geological Background

The Grenville Province in Ontario may be separated into 2 major subdivisions: the Central Gneiss Belt and the Central Metasedimentary Belt (Wynne-Edwards 1972). The Grenville Front Tectonic Zone separates the Grenville Province from the Superior and Southern Provinces to the north and northwest.

The Central Gneiss Belt consists primarily of upper amphibolite and local granulite facies quarztofeldspathic gneisses, mainly orthogneiss with subordinate paragneiss (Easton 1992). The Central Metasedimentary Belt is a major Mesoproterozoic accumulation of marble, volcanic rocks, and clastic metasedimentary rocks. Most of the mineral deposits in the Ontario portion of the Grenville Province are located within the Central Metasedimentary Belt (Easton 1992).

Fourteen mafic–ultramafic intrusions were sampled within the Grenville Province in both the Central Gneiss Belt and the Central Metasedimentary Belt (Table 11). They cover a wide range of Neo- to Mezoproterozoic ages and a variety of magmatic affinities (tholeiitic, calc-alkalic and alkalic) and compositions (ultramafic and mafic to intermediate and felsic).

An Al-Fe+Ti-Mg cation plot and Pd versus Cu, Ni/Pd versus Ni/Cu, Ni/Pt versus Ni/Cu, and Pd/Pt versus Ni/Cu plots for the mafic–ultramafic bodies in the Grenville Province are shown in Figures 23, 24 and 25.

Summary and Discussion

None of the intrusions in the Grenville Province sampled for this project contained significant abundances of PGEs. It is possible that the number of samples and/or distribution may not have been appropriate to locate potential anomalies. However, the background level of PGE appears to be generally low for intrusions of various ages, tectonic settings, and compositions within the Grenville Province, suggesting a generally low potential for PGE mineralization, at least in the intrusions that were sampled in this study.

Table 11. Characteristics of the mafic–ultramafic bodies in the Grenville Province.

Location	Timing	Sulphide Saturation State	Magmatic Affinity	Source	Tectonic Setting	Mineralization Type
Caribou Lake		SS	TH	DM?		Unknown
Donaldson Bay			CA	C	CA?	Unknown
Killer Creek		SS	CA	MM	A?	Unknown
Lavant		SS	CA		BA or RA	Unknown
Leo Lake			A?	MM?	CA?	Unknown
Lingham Lake			CA?	MM?	MB?	Unknown
Little Papineau Lake						Unknown
McClintock		SS	TH	DM		Unknown
Mountain Grove			A	MM	CA?	Unknown
Papineau						Unknown
Raglan Hills		SS	TH	UM	MB?	Unknown
Tudor			TH		MB	Unknown
Wolfe Lake			A	MM	CA?	Unknown

Sulphide Saturation State: SS = sulphide saturated, SU = sulphide undersaturated; **Magmatic Affinity**: A = alkalic, CA = calc-alkalic, TH = tholeiitic; **Source**: C = crust, DM = depleted mantle, MM = metasomatized mantle, UM = upper mantle; **Tectonic Setting**: A = arc, BA = back arc, CA = continental arc, MB = marginal basin, RA = rifted arc; ? = unclear or based on limited data.

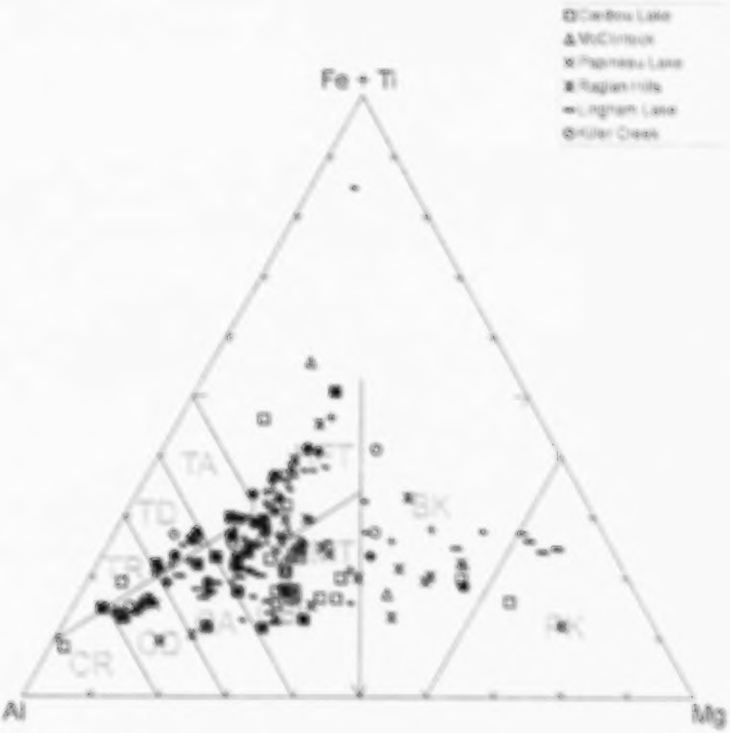

Figure 23. Al–Fe+Ti–Mg cation plot of samples from mafic–ultramafic bodies in the Grenville Province. Fields from Jensen (1976). C = calc-alkalic, T = tholeiitic, K = komatiitic, P = picritic, R = rhyolite, D = dacite, A = andesite, B = basalt, HF = high Fe, HM = high Mg.

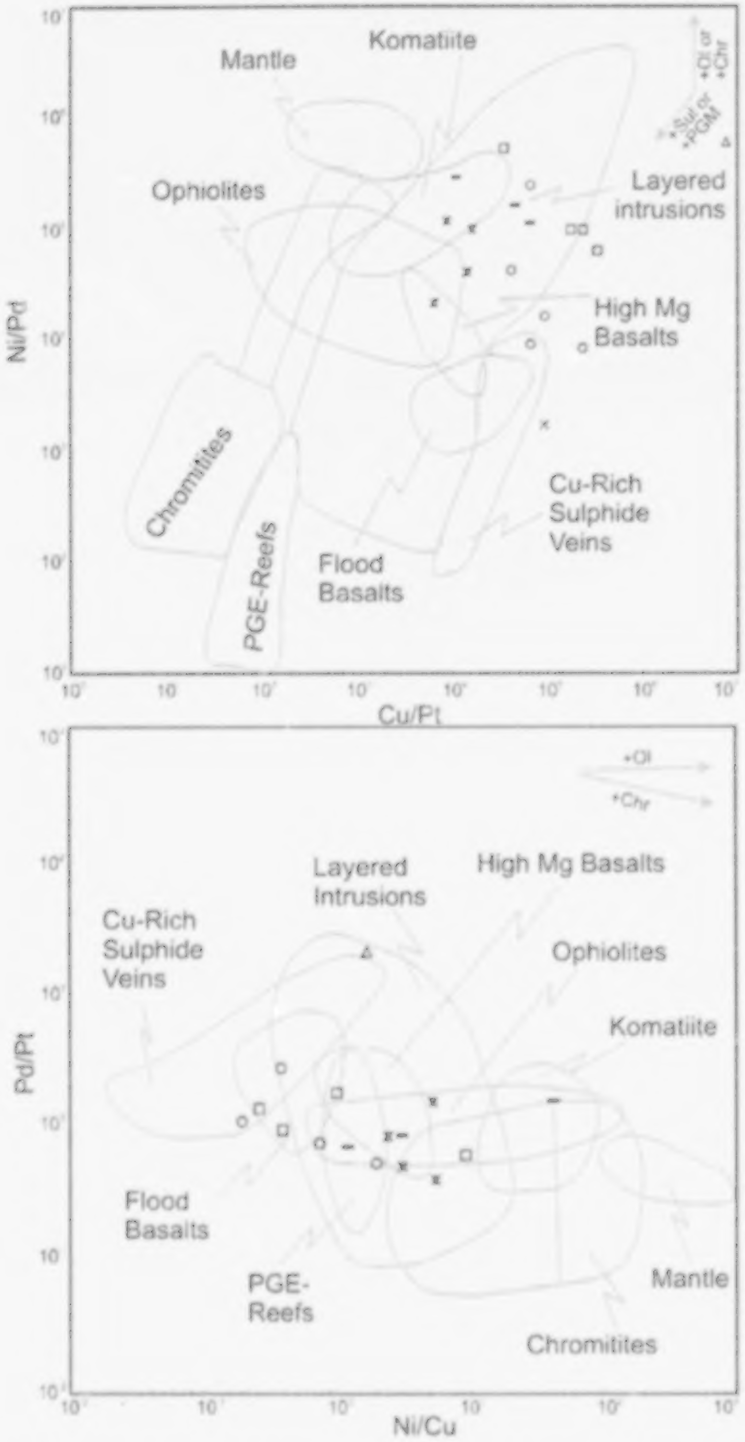

Figure 24. Ni/Pd versus Cu/Pt and Pd/Pt versus Ni/Cu diagrams of samples from mafic–ultramafic bodies in the Grenville Province. Fields from Barnes (1990). Sol = sulphides, PGM = platinum group minerals, Ol = olivine, Chr = chromite. See Figure 23 for legend.

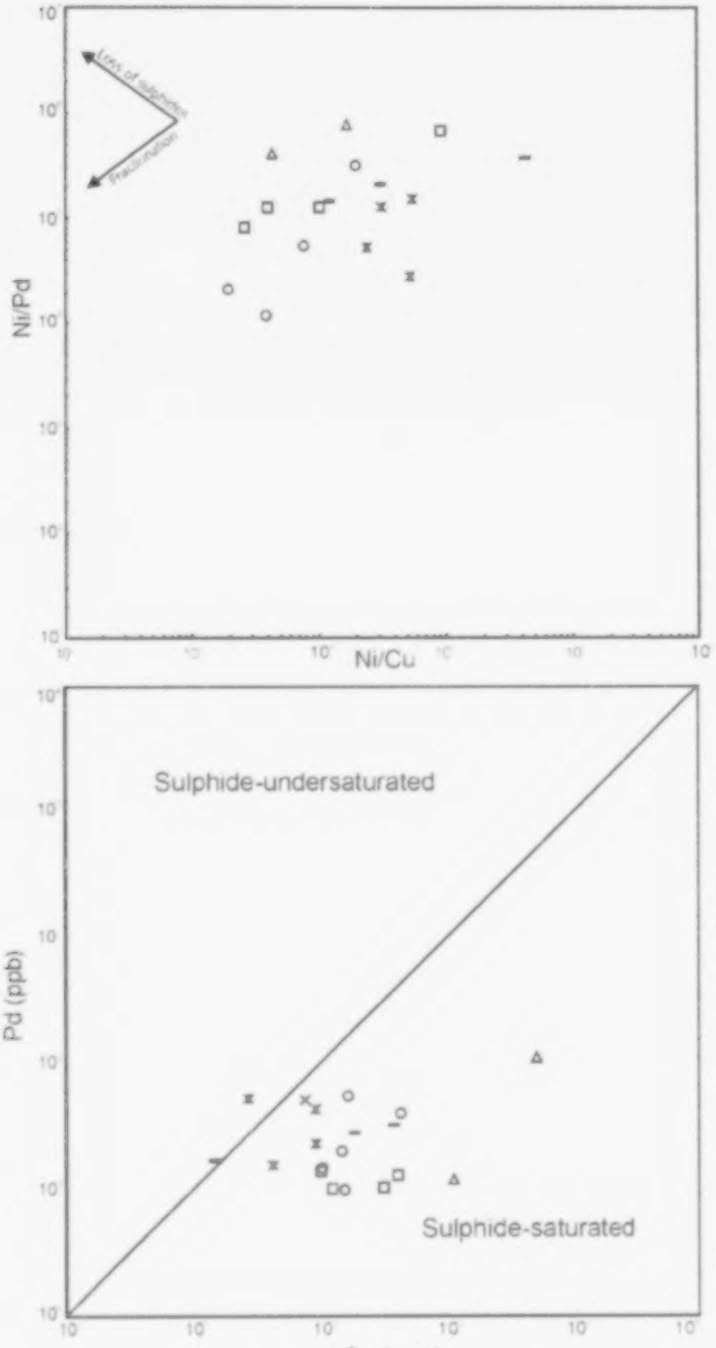

Figure 25. Ni/Pd versus Ni/Cu and Pd versus Cu diagrams of samples from mafic–ultramafic bodies in the Grenville Province. See Figure 23 for legend. The line separating sulphide-saturated from sulphide-undersaturated fields in the Pd versus Cu diagram is approximate (Vogel et al. 1999).

Conclusions and Recommendations for Exploration

Types I and II mineralization in Ontario are associated with either tholeiitic, calc-alkalic, or alkalic magmas.

There are numerous alkalic intrusions in Ontario that host Types I and II mineralization. The Coldwell and Killala complexes and the mineralized Quetico intrusions contain a large proportion of ultramafic-mafic lithologies compared to most other alkalic complexes. This suggests that exploration of alkalic complexes for PGE should focus on those with abundant mafic–ultramafic lithologies. The abundances of PGE in the Quetico intrusion are exceptionally high (~100 samples with >700 ppb Pt+Pd: MacTavish 1999). In Ontario, some examples of other alkalic complexes containing mafic lithologies include the Lackner Lake and Clay-Howells Alkalic Complexes (Sage 1991). In addition, some of the 1.9 billion-year-old carbonatite complexes in the northern section of the Kapuskasing Structural Zone contain subordinate pyroxenite (e.g., Argor, Goldray, Cargill Township Carbonatite Complex; Sage 1991) and may potentially warrant investigation for PGE.

Calc-alkalic intrusive complexes do not typically contain PGE mineralization. Possible mineralized calc-alkalic intrusions include those linked with sanukitoid suites (Stern et al. 1989) in northwestern Ontario (e.g., Entwine Lake: Arnold et al. 2000, and Roaring River). Some authors suggest that the sanukitoid suites have an alkalic magmatic affinity. The data generated through this study suggest that the Roaring River intrusion is calc-alkalic, but there are insufficient data to clearly take a position in the debate regarding their magmatic affinity. Currently known mineralization in the Roaring River and the Entwine Lake intrusions is interpreted to be predominantly Type II.

Some intrusions with tholeiitic affinities are interpreted to have been derived from a depleted mantle source and range from synvolcanic to syntectonic (e.g., Shebandowan), other tholeiitic intrusions are interpreted to have been derived from an enriched mantle source (e.g., Tib Lake), and some appear to have been derived from magmas that have assimilated continental crustal material (e.g., Seagull). It is important to appreciate that magmas contaminated by small amounts of continental crust are difficult to distinguish from magmas generated from a source region enriched in incompatible elements (e.g., in subduction zones), at least geochemically. This particularly applies to the suite of trace elements analyzed in this study. Additional trace element data will be required to more accurately characterize the source regions and subsequent processes such as crustal contamination. As crustal contamination may induce sulphide-saturation, it may be an important factor in the development of Types I, II, and III mineralization (Naldrett 1989, Maier and Barnes 1999).

Most economic PGE ore deposits comprise Type III mineralization (e.g., Bushveld, Stillwater, Great Dyke). Exploration for this style of mineralization is extremely difficult, as the target reefs are typically very thin and poorly exposed. Successful exploration for this style of mineralization requires a thorough understanding of the geology of the intrusion, including the crystallization sequence, and closely-spaced geochemical sampling to resolve changes in sulphide saturation state (Hoatson and Keays 1989, Barnes and Maier 2002). As noted above, Type III mineralization is not mutually exclusive from Types I and II mineralization. In fact, many world-class PGE deposits (e.g., Bushveld, Stillwater) also contain small amounts of Types I or II mineralization. The Stillwater and Bushveld Complexes occur within granitoid/gneiss terranes, which likely represented tectonically stable environments necessary to support and permit long-term crystallization in such large (up to 3 km thick) mafic–ultramafic intrusions (Campbell et al. 1983; Blake 1998; Hoatson and Blake 2000). Ontario contains many granitoid/gneiss terranes (Willams Lake Batholith, Onaman Lake Batholith), which have generally only been mapped at a large scale. These areas have significant potential to host large mafic–ultramafic intrusions.

Very little Type III mineralization has been discovered in Ontario thus far. Only Fred's Flow (Stone et al. 1996), the Boston Creek unit (Stone et al. 1996), the Centre Hill Complex (this study), the Coldwell complex, the Nabish Lake intrusion, and the Moshkinabi intrusion are known to contain thin, apparently subeconomic PGE-bearing horizons. Most differentiated mafic–ultramafic flows/sills crossing the transition between olivine-saturation (peridotite) and plagioclase-saturation (gabbro) should reach sulphide saturation (see discussion by Campbell et al. 1983; Lesher and Stone 1996). Therefore, the presence of a sulphide-rich horizon at or near the interface between the peridotite and the gabbro should be expected. However, there are very few known sulphide "reefs" in differentiated mafic–ultramafic flows or intrusions in Ontario, suggesting that these zones may be too thin to be recognized and could easily have been missed during sampling. Most of the intrusions investigated during this study are located in greenstone belts, which are not known to be a particularly favourable environment for large Type III deposits. It is possible that this is because most of the mafic and ultramafic rocks in greenstone belts appear to have been emplaced into continental rifts, rifted continental margins, or rifted arcs, not the thick intracratonic areas capable of supporting large mafic–ultramafic layered intrusions. Thus far, the intrusions that host Type III PGE mineralization in Ontario are alkalic (e.g., Coldwell complex) or tholeiitic (e.g., Moshkinabi, and Nabish Lake). The Moshkinabi, and Nabish Lake tholeiitic intrusions are relatively small in size, which limits their potential to host world class PGE mineralization, both in terms of the mass of magma from which PGE could be extracted and the strike length of a reef. The Coldwell complex hosts a significant PGE-enriched seam (Bermuda Showing) and other large alkalic complexes with significant mafic components may also have similar potential. Stratigraphically higher reefs may have potential, particularly those that are above the first appearance of plagioclase as a cumulus phase (Campbell et al. 1983).

Type IVa mineralization occurs at the Peterson Property and in the Trout Bay area of the Red Lake greenstone belt. There seems to be a clear association of high Pd, Co, and Ni, which occur as arsenide minerals in the host iron formations. Further work must be completed at the Trout Bay and Peterson properties to fully evaluate the potential for PGE and Ni-Cu-PGE mineralization in similar contexts elsewhere in Ontario. Type IVc mineralization occurs in the Lac des Iles deposits as disseminated, sulphide-poor mineralization hosted in breccias that show evidence of interaction with fluids. The PGE occurrences in the Tib Lake and Buck Lake intrusions are interpreted to be of similar origin as the Lac des Iles (Type IVc), but they also host Type I mineralization (Kuhner Occurence). Although intrusions showing textural and compositional characteristics of Type IVc mineralization were investigated throughout the province, it appears that only the intrusions located in proximity to Lac des Iles contain significant abundances of PGEs. Although it is possible that the source region in that area was anomalously enriched in PGEs, the generation of economic abundances also requires efficient transport and precipitation mechanisms. Much more work is required on deposits of that type before we will be able to construct a robust exploration model.

Type V mineralization is typically associated with other types of mineralization and can therefore occur in any tectonic setting and in any type of intrusion (e.g., tholeiitic, calc-alkalic, or alkalic). For example, the Rex-Werner-Bug mafic–ultramafic occurrence hosts both Types I and V mineralization. The abundances of PGEs in this type of mineralization can be very high (e.g., >34 g/t at the Rathbun Lake occurrence, Wanapitei intrusion).

Appendix 1

Sample Locations and Rock Names

Abbreviations:
fp - feldspar
qz - quartz
sul - sulphides

Appendix 1 - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-CAM-100A	Pipestone Bay	OTH-001	Talc-carbonate schist	15	416480	5655920	-94.19177	51.05073
01-CAM-101A	Pipestone Bay	OTH-001	Talc-carbonate schist	15	416735	5655888	-94.18812	51.05048
01-CAM-102A	Pipestone Bay	OTH-001	Talc-carbonate schist	15	416784	5656182	-94.18749	51.05313
01-CAM-103A	Pipestone Bay	OTH-001	Talc-carbonate schist	15	416683	5656438	-94.18899	51.05542
01-CAM-104A	Pipestone Bay	OTH-001	Dunite	15	416707	5656670	-94.18870	51.05751
01-CAM-105A	Pipestone Bay	OTH-001	Dunite	15	416434	5657120	-94.19270	51.06151
01-CAM-106A	Pipestone Bay	OTH-001	Carbonate-talc schist	15	416354	5657402	-94.19390	51.06404
01-CAM-107A	Pipestone Bay	OTH-001	Dunite	15	416446	5657658	-94.19265	51.06635
01-CAM-108A	Pipestone Bay	OTH-001	Dunite	15	416788	5657945	-94.18784	51.06898
01-CAM-109A	Pipestone Bay	OTH-001	Peridotite	15	417391	5658319	-94.17932	51.07243
01-CAM-110A	Pipestone Bay	OTH-001	Dunite	15	417469	5658315	-94.17820	51.07241
01-CAM-111A	Pipestone Bay	OTH-001	Peridotite to dunite	15	416637	5658604	-94.19014	51.07488
01-CAM-112A	Pipestone Bay	OTH-001	Peridotite to dunite	15	411050	5659284	-94.27004	51.08016
01-CAM-113A	Pipestone Bay	OTH-001	Metagabbro	15	411775	5658479	-94.25950	51.07303
01-CAM-114A	Pipestone Bay	OTH-001	Peridotite	15	413324	5657618	-94.23719	51.06553
01-CAM-115A	Pipestone Bay	OTH-001	Dunite	15	413494	5657284	-94.23468	51.06255
01-MAH-005A	Pipestone Bay	OTH-001	Dunite	15	414183	5656528	-94.22467	51.05586
01-MAH-006A	Pipestone Bay	OTH-001	Peridotite or pyroxenite protolith	15	414337	5656415	-94.22245	51.05487
01-MAH-006B	Pipestone Bay	OTH-001	Hornblende-leucogabbro dike	15	414337	5656415	-94.22245	51.05487
01-MAH-007A	Pipestone Bay	OTH-001	Dunite	15	414618	5655953	-94.21833	51.05075
01-MAH-008A	Pipestone Bay	OTH-001	Peridotite or pyroxenite?	15	414903	5655643	-94.21419	51.04801
01-MAH-009A	Pipestone Bay	OTH-001	Peridotite or dunite?	15	415800	5655721	-94.20142	51.04884
01-MAH-010A	Pipestone Bay	OTH-001	Peridotite	15	415735	5656684	-94.20257	51.05749
01-CMV-075B1	Trout Bay	OTH-002	Ultramafic flow	15	414879	5651006	-94.21345	51.00632
01-CMV-075B2	Trout Bay	OTH-002	Cannot be identified	15	414879	5651006	-94.21345	51.00632
01-CMV-075C	Trout Bay	OTH-002	Metagabbro	15	414879	5651006	-94.21345	51.00632
01-CMV-075D	Trout Bay	OTH-002	Metagabbro	15	414879	5651006	-94.21345	51.00632
01-CMV-075E	Trout Bay	OTH-002	Mafic volcanic	15	414879	5651006	-94.21345	51.00632
01-CMV-076A	Trout Bay	OTH-002	Metagabbro	15	415282	5650544	-94.20760	51.00222
01-CMV-077A	Trout Bay	OTH-002	Gabbro	15	415409	5650589	-94.20580	51.00265
01-CMV-078A	Trout Bay	OTH-002	Mafic volcanic	15	415300	5650468	-94.20732	51.00154
01-CMV-078B	Trout Bay	OTH-002	Mafic metavolcanic	15	415300	5650468	-94.20732	51.00154
01-CMV-083A	Trout Bay	OTH-002	Metagabbro	15	415424	5651961	-94.20590	51.01498
01-CMV-084A	Trout Bay	OTH-002	Metagabbro	15	414917	5652090	-94.21316	51.01607
01-CMV-085A	Trout Bay	OTH-002	Metagabbro	15	413899	5652665	-94.22781	51.02109
01-CMV-085B	Trout Bay	OTH-002	Metagabbro	15	413899	5652665	-94.22781	51.02109

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-CMV-086A	Trout Bay	OTH-002	Komatiite	15	416090	5653025	-94.19666	51.02465
01-CMV-086B	Trout Bay	OTH-002	Komatiite	15	416090	5653025	-94.19666	51.02465
01-ERD-202A	Golden Arm	OTH-003	Metavolcanic	15	421101	5653665	-94.12536	51.03111
01-ERD-203A	Golden Arm	OTH-003	Metamelagabbro-metapyroxenite	15	421230	5654249	-94.12365	51.03638
01-ERD-204A	Golden Arm	OTH-003	Pyroxene-hornblendite or metapyroxenite	15	421636	5654546	-94.11792	51.03910
01-ERD-205A	Golden Arm	OTH-003	Wehrlite (peridotite)	15	421845	5654780	-94.11499	51.04124
01-ERD-206A	Golden Arm	OTH-003	Wehrlite to dunite	15	421930	5654808	-94.11379	51.04150
01-ERD-207A	Golden Arm	OTH-003	Wehrlite (peridotite)	15	422053	5655135	-94.11210	51.04446
01-ERD-208A	Golden Arm	OTH-003	Olivine-websterite	15	422269	5655440	-94.10909	51.04723
01-ERD-209A	Golden Arm	OTH-003	Peridotite	15	422806	5655896	-94.10153	51.05140
01-ERD-210A	Golden Arm	OTH-003	Dunite	15	422666	5656494	-94.10365	51.05676
01-ERD-211A	Golden Arm	OTH-003	Dunite	15	422521	5656417	-94.10570	51.05605
01-ERD-212A	Golden Arm	OTH-003	Dunite	15	422401	5656330	-94.10740	51.05525
01-ERD-213A	Golden Arm	OTH-003	Peridotite	15	422706	5656279	-94.10303	51.05483
01-ERD-214A	Golden Arm	OTH-003	Peridotite	15	422411	5656149	-94.10722	51.05362
01-ERD-215A	Golden Arm	OTH-003	Peridotite	15	422209	5655912	-94.11005	51.05146
01-ERD-216A	Golden Arm	OTH-003	Pyroxenite	15	421897	5655241	-94.11435	51.04539
01-ERD-217A	Golden Arm	OTH-003	Metamelagabbro-metapyroxenite	15	421727	5655125	-94.11675	51.04432
01-ERD-218A	Golden Arm	OTH-003	Peridotite	15	421267	5654732	-94.12323	51.04073
01-ERD-219A	Golden Arm	OTH-003	Pyroxenite	15	420860	5654269	-94.12893	51.03651
01-ERD-220A	Golden Arm	OTH-003	Pyroxenite to peridotite	15	420041	5654123	-94.14058	51.03508
01-ERD-221A	Golden Arm	OTH-003	Peridotite	15	419867	5654085	-94.14305	51.03472
01-ERD-193A	Hammel Lake	OTH-004	Metaleucogabbro	15	429997	5660074	-93.99976	51.08989
01-ERD-194A	Hammel Lake	OTH-004	Metagabbro	15	429676	5660010	-94.00433	51.08927
01-ERD-195A	Hammel Lake	OTH-004	Leucogabbro	15	429625	5659929	-94.00504	51.08854
01-ERD-196A	Hammel Lake	OTH-004	Gabbro-metagabbro	15	429529	5659696	-94.00637	51.08643
01-ERD-197A	Hammel Lake	OTH-004	Gabbro-metagabbro	15	429541	5660054	-94.00626	51.08965
01-ERD-198A	Hammel Lake	OTH-004	Granite gneiss	15	429487	5660171	-94.00706	51.09070
01-ERD-199A	Hammel Lake	OTH-004	Tonalite gneiss	15	429417	5660224	-94.00807	51.09116
01-ERD-200A	Hammel Lake	OTH-004	Metaleucogabbro	15	430162	5659812	-93.99735	51.08755
01-ERD-201A	Hammel Lake	OTH-004	Quartz-diorite to quartz-gabbro	15	430272	5659661	-93.99575	51.08621
01-ERD-226A	Hammel Lake	OTH-004	Tonalite	15	428790	5669638	-94.01888	51.17573
01-ERD-222A	Pure Gold Gabbro	OTH-005	Hornblende-quartz schist	15	440870	5668869	-93.84597	51.17019
01-ERD-223A	Pure Gold Gabbro	OTH-005	Metavolcanic breccia?	15	440007	5667757	-93.85812	51.16010
01-ERD-224A	Pure Gold Gabbro	OTH-005	Garnet-biotite-muscovite-quartz schist	15	439764	5667588	-93.86157	51.15856
01-ERD-225A	Pure Gold Gabbro	OTH-005	Metadiorite to metagabbro	15	438805	5667556	-93.87528	51.15817
01-ERD-189A	Dome-McDonough-Bateman Properties	OTH-006	Metagabbro	15	445716	5661666	-93.77557	51.10590
01-ERD-190A	Dome-McDonough-Bateman Properties	OTH-006	Metamelagabbro	15	446529	5662598	-93.76410	51.11436

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-ERD-191A	Dome-McDonough-Bateman Properties	OTH-006	Metamelagabbro	15	446495	5662743	-93.76461	51.11566
01-ERD-192A	Dome-McDonough-Bateman Properties	OTH-006	Metamelagabbro	15	446765	5663028	-93.76079	51.11825
01-ERD-192B	Dome-McDonough-Bateman Properties	OTH-006	Mafic schist or foliated metagabbro	15	446765	5663028	-93.76079	51.11825
01-MAH-001A	Dome-McDonough-Bateman Properties	OTH-006	Metamelagabbro to metamelagabbronorite	15	444815	5661540	-93.78842	51.10469
01-MAH-002A	Dome-McDonough-Bateman Properties	OTH-006	Metamelagabbro	15	446865	5663266	-93.75940	51.12040
01-MAH-003A	Dome-McDonough-Bateman Properties	OTH-006	Metamelagabbro	15	446797	5663141	-93.76035	51.11927
01-CMV-087A	Peterson Property	OTH-007	Mafic volcanic?	15	453241	5657964	-93.66762	51.07328
01-CMV-087B	Peterson Property	OTH-007	Gabbro	15	453241	5657964	-93.66762	51.07328
01-CMV-087C	Peterson Property	OTH-007	Banded iron formation	15	453241	5657964	-93.66762	51.07328
01-CMV-087D	Peterson Property	OTH-007	Gabbro	15	453241	5657964	-93.66762	51.07328
01-CMV-088A	Peterson Property	OTH-007	Mafic volcanic	15	453680	5657460	-93.66129	51.06878
01-CMV-088B	Peterson Property	OTH-007	Mafic volcanic	15	453680	5657460	-93.66129	51.06878
01-CMV-088C	Peterson Property	OTH-007	Peridotite	15	453680	5657460	-93.66129	51.06878
01-CMV-088D	Peterson Property	OTH-007	Ultramafic rock?	15	453680	5657460	-93.66129	51.06878
01-CMV-088E	Peterson Property	OTH-007		15	453680	5657460	-93.66129	51.06878
01-CMV-089A	Peterson Property	OTH-007	Gabbro	15	453258	5657471	-93.66731	51.06885
01-CMV-090A	Peterson Property	OTH-007	Gabbro					
01-CMV-091A	Peterson Property	OTH-007	Gabbro	15	453730	5657547	-93.66058	51.06957
01-CMV-092A	Peterson Property	OTH-007	Metagabbro	15	453421	5657498	-93.66499	51.06910
01-CMV-079A	Pakwash Lake	OTH-008	Quartz-monzodiorite	15	469270	5631094	-93.43656	50.83274
01-CMV-080A	Pakwash Lake	OTH-008	Quartz-diorite	15	470186	5626879	-93.42322	50.79488
01-CMV-081A	Pakwash Lake	OTH-008	Quartz-monzodiorite	15	470749	5628863	-93.41539	50.81275
01-CMV-082A	Bruce Lake	OTH-009	Metagabbro	15	474608	5635299	-93.36106	50.87081
01-CMV-082B	Bruce Lake	OTH-009	Metagabbro	15	474608	5635299	-93.36106	50.87081
01-CAM-096A	Snakeweed Lake	OTH-010	Plagioclase-bearing hornblende-pyroxenite	15	490939	5643153	-93.12916	50.94192
01-CAM-096B	Snakeweed Lake	OTH-010	Plagioclase-bearing pyroxene-hornblendite	15	490939	5643153	-93.12916	50.94192
01-CAM-097A	Snakeweed Lake	OTH-010	Pyroxene-hornblende-gabbronorite	15	490998	5643013	-93.12832	50.94066
01-CAM-098A	Snakeweed Lake	OTH-010	Melapyroxene to hornblende-gabbro	15	492190	5642330	-93.11134	50.93454
01-CAM-099A	Snakeweed Lake	OTH-010	Pegmatitic melapyroxene-hornblende-gabbro	15	492139	5642320	-93.11206	50.93445
93-JRP-100	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	385780	5589450	-94.60870	50.44790
93-JRP-100D	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	385780	5589450	-94.60870	50.44790
93-JRP-101	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	385790	5589410	-94.60850	50.44750
93-JRP-62	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	386400	5586900	-94.59920	50.42510
93-JRP-68	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	385780	5589450	-94.60870	50.44790
93-JRP-69	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	385780	5589450	-94.60870	50.44790
93-JRP-97	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	385780	5589450	-94.60870	50.44790
94-JRP-1003	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	379716	5589774	-94.69420	50.44960
94-JRP-1004	Rex-Werner-Bug Lakes	OTH-011	Orthopyroxene-gabbro	15	379704	5589771	-94.69430	50.44950

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
94-JRP-1019	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	379711	5589768	-94.69420	50.44950
94-JRP-1026	Rex-Werner-Bug Lakes	OTH-011	Orthopyroxene-gabbro	15	379661	5589750	-94.69490	50.44930
94-JRP-1026A	Rex-Werner-Bug Lakes	OTH-011	Orthopyroxene-gabbro	15	379661	5589750	-94.69490	50.44930
94-JRP-1028	Rex-Werner-Bug Lakes	OTH-011	Leucogabbro	15	379661	5589750	-94.69490	50.44930
94-JRP-1041	Rex-Werner-Bug Lakes	OTH-011	Leucogabbro	15	379612	5589712	-94.69560	50.44900
94-JRP-1069	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	356739	5592310	-95.01860	50.46720
94-JRP-1078	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	357304	5592365	-95.01060	50.46780
94-JRP-1079	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	357304	5592365	-95.01060	50.46780
94-JRP-1083	Rex-Werner-Bug Lakes	OTH-011	Ultramafic					
94-JRP-1085	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	355163	5592418	-95.04080	50.46780
94-JRP-1086	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	355163	5592418	-95.04080	50.46780
94-JRP-1087	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	355163	5592418	-95.04080	50.46780
94-JRP-1091	Rex-Werner-Bug Lakes	OTH-011	Amphibolite	15	359575	5592256	-94.97860	50.46740
94-JRP-1094	Rex-Werner-Bug Lakes	OTH-011	Skarn	15	359575	5592256	-94.97860	50.46740
94-JRP-1100	Rex-Werner-Bug Lakes	OTH-011	Skarn	15	360203	5592377	-94.96980	50.46860
94-JRP-1102	Rex-Werner-Bug Lakes	OTH-011	Skarn	15	360203	5592377	-94.96980	50.46860
94-JRP-1107	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	364591	5591303	-94.90760	50.46000
94-JRP-1109	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	364591	5591303	-94.90760	50.46000
94-JRP-1114	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	355198	5590967	-95.03980	50.45470
94-JRP-1119	Rex-Werner-Bug Lakes	OTH-011	Skarn	15	360851	5592412	-94.96070	50.46910
94-JRP-1122	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	367194	5590461	-94.87070	50.45300
94-JRP-1123	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	367194	5590461	-94.87070	50.45300
94-JRP-1124	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	367194	5590461	-94.87070	50.45300
94-JRP-1125	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	367194	5590461	-94.87070	50.45300
94-JRP-1127	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	367370	5590473	-94.86820	50.45320
94-JRP-1128	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	367370	5590473	-94.86820	50.45320
94-JRP-1130	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	367735	5590511	-94.86310	50.45360
94-JRP-1131	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	367735	5590511	-94.86310	50.45360
94-JRP-1132	Rex-Werner-Bug Lakes	OTH-011	Ultramafic	15	367735	5590511	-94.86310	50.45360
94-JRP-1137	Rex-Werner-Bug Lakes	OTH-011	Skarn	15	370159	5590826	-94.82910	50.45700
94-JRP-1139	Rex-Werner-Bug Lakes	OTH-011	Skarn	15	370159	5590826	-94.82910	50.45700
94-JRP-1154	Rex-Werner-Bug Lakes	OTH-011	Gabbro	15	362683	5589768	-94.93390	50.44580
01-CMV-066A	Mulcahy Lake	OTH-012	Gabbronorite	15	475565	5494146	-93.33833	49.60138
01-CMV-067A	Mulcahy Lake	OTH-012	Gabbronorite	15	474660	5493059	-93.35079	49.59157
01-CMV-067B	Mulcahy Lake	OTH-012	Gabbronorite	15	474660	5493059	-93.35079	49.59157
01-CMV-068A	Mulcahy Lake	OTH-012	Gabbronorite	15	476130	5494538	-93.33054	49.60493
01-CMV-069A	Mulcahy Lake	OTH-012	Gabbronorite	15	476457	5494683	-93.32602	49.60625
01-CMV-070A	Mulcahy Lake	OTH-012	Metagabbro	15	473180	5490096	-93.37106	49.56485

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-CMV-070B	Mulcahy Lake	OTH-012	Metagabbro	15	473180	5490096	-93.37106	49.56485
01-CMV-071A	Mulcahy Lake	OTH-012	Gabbro	15	473308	5490741	-93.36934	49.57966
01-CMV-072A	Mulcahy Lake	OTH-012	Metagabbro	15	473618	5491364	-93.36509	49.57628
01-CMV-073A	Mulcahy Lake	OTH-012	Metagabbro	15	474959	5492572	-93.34662	49.58720
01-CMV-074A	Mulcahy Lake	OTH-012	Hornblende-gabbro	15	474866	5492735	-93.34792	49.58866
01-CMV-074C	Mulcahy Lake	OTH-012	Gabbro	15	474866	5492735	-93.34792	49.58866
01-ERD-227A	Mulcahy Lake	OTH-012	Pyroxene-hornblende-gabbro	15	474374	5494883	-93.35486	49.60796
01-ERD-228A	Mulcahy Lake	OTH-012	Pyroxene-hornblende-gabbro	15	474606	5494999	-93.35166	49.60901
01-ERD-229A	Mulcahy Lake	OTH-012	Gabbronorite	15	474764	5495458	-93.34950	49.61315
01-ERD-230A	Mulcahy Lake	OTH-012	Leucogabbro	15	474816	5495609	-93.34879	49.61451
01-ERD-231A	Mulcahy Lake	OTH-012	Gabbro	15	474994	5494974	-93.34629	49.60881
01-ERD-232A	Mulcahy Lake	OTH-012	Gabbronorite	15	474208	5494619	-93.35714	49.60558
01-ERD-233A	Mulcahy Lake	OTH-012	Pyroxene-hornblende-gabbro	15	474028	5495013	-93.35966	49.60912
01-ERD-234A	Mulcahy Lake	OTH-012	Gabbronorite	15	473449	5494811	-93.36766	49.60727
01-ERD-235A	Mulcahy Lake	OTH-012	Olivine-gabbronorite	15	473885	5494387	-93.36160	49.60348
01-ERD-136A	Denmark Lake-Rupert Lake	OTH-013	Metagabbro	15	451386	5470404	-93.67001	49.38637
01-ERD-137A	Denmark Lake-Rupert Lake	OTH-013	Metagabbro?	15	451560	5470235	-93.66638	49.38480
01-ERD-138A	Denmark Lake-Rupert Lake	OTH-013	Metagabbro	15	451612	5470434	-93.66690	49.38666
01-ERD-139A	Denmark Lake-Rupert Lake	OTH-013	Cannot be identified	15	451683	5470522	-93.66594	49.38746
01-ERD-139B	Denmark Lake-Rupert Lake	OTH-013	Olivine-gabbronorite	15	451683	5470522	-93.66594	49.38746
01-ERD-140A	Denmark Lake-Rupert Lake	OTH-013	Gabbronorite	15	451666	5470460	-93.66616	49.38690
01-ERD-141A	Denmark Lake-Rupert Lake	OTH-013	Metagabbro	15	451894	5470324	-93.66301	49.38570
01-ERD-142A	Denmark Lake-Rupert Lake	OTH-013	Serpentinite	15	452520	5470251	-93.65437	49.38509
01-ERD-143A	Denmark Lake-Rupert Lake	OTH-013	Metapyroxenite	15	453420	5469628	-93.64190	49.37955
01-ERD-144A	Denmark Lake-Rupert Lake	OTH-013	Metagabbro	15	453893	5469632	-93.63538	49.37963
01-ERD-145A	Denmark Lake-Rupert Lake	OTH-013	Metapyroxenite	15	454980	5469304	-93.62037	49.37676
01-ERD-146A	Denmark Lake-Rupert Lake	OTH-013	Metamelagabbro	15	452483	5469587	-93.65480	49.37911
01-ERD-147A	Denmark Lake-Rupert Lake	OTH-013	Metagabbro-metamelagabbro	15	452223	5469565	-93.65838	49.37889
01-ERD-148A	Denmark Lake-Rupert Lake	OTH-013	Metagabbro	15	451906	5469821	-93.66278	49.38117
01-ERD-149A	Denmark Lake-Rupert Lake	OTH-013	Olivine-gabbronorite or metapyroxenite	15	451663	5469809	-93.66613	49.38104
01-ERD-150A	Denmark Lake-Rupert Lake	OTH-013	Metagabbro	15	448547	5470005	-93.70908	49.38255
01-ERD-151A	Denmark Lake-Rupert Lake	OTH-013	Metamelagabbro to metapyroxenite	15	448324	5469968	-93.71214	49.38220
01-ERD-152A	Denmark Lake-Rupert Lake	OTH-013	Metagabbro or hornblende-gabbro	15	448104	5469825	-93.71516	49.38089
01-ERD-153A	Denmark Lake-Rupert Lake	OTH-013	Pyroxene-hornblende-gabbro	15	449950	5468994	-93.68962	49.37357
01-ERD-154A	Denmark Lake-Rupert Lake	OTH-013	Metagabbro-leucogabbro	15	450201	5470037	-93.68629	49.38298
01-ERD-155A	Denmark Lake-Rupert Lake	OTH-013	Cannot be identified	15	450303	5470079	-93.68489	49.38336
01-ERD-156A	Denmark Lake-Rupert Lake	OTH-013	Olivine-melagabbronorite	15	450384	5470259	-93.68380	49.38499
01-ERD-157A	Denmark Lake-Rupert Lake	OTH-013	Hornblende-gabbro or metagabbro	15	450355	5470569	-93.68424	49.38777

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-ERD-158A	Denmark Lake-Rupert Lake	OTH-013	Metagabbro	15	450589	5470606	-93.68102	49.38813
01-ERD-159A	Denmark Lake-Rupert Lake	OTH-013	Leucogabbro	15	450792	5470782	-93.67824	49.38973
01-CAM-050A	Kakagi Sills	OTH-014	Hornblende-gabbro	15	431499	5448463	-93.94023	49.18711
01-CAM-051A	Kakagi Sills	OTH-014	Metamelagabbro	15	431480	5448551	-93.94051	49.18790
01-CAM-052A	Kakagi Sills	OTH-014	Metagabbro	15	431482	5448747	-93.94052	49.18966
01-CAM-053A	Kakagi Sills	OTH-014	Tonalite	15	431466	5448905	-93.94076	49.19108
01-CAM-054A	Kakagi Sills	OTH-014	Metadiorite to metagabbro	15	431355	5449270	-93.94235	49.19435
01-CAM-055A	Kakagi Sills	OTH-014	Quartz-monzonite	15	429925	5450521	-93.96219	49.20544
01-CAM-056A	Kakagi Sills	OTH-014	Quartz-diorite to quartz-gabbro	15	429834	5450772	-93.96349	49.20769
01-CAM-057A	Kakagi Sills	OTH-014	Gabbro	15	429777	5450853	-93.96428	49.20841
01-CAM-058A	Kakagi Sills	OTH-014	Tonalite-gabbro	15	428884	5450248	-93.97643	49.20287
01-CAM-059A	Kakagi Sills	OTH-014	Pyroxenite	15	428267	5451591	-93.98514	49.21488
01-CAM-060A	Kakagi Sills	OTH-014	Plagioclase-bearing pyroxenite	15	428267	5451565	-93.98514	49.21464
01-CAM-061A	Kakagi Sills	OTH-014	Hornblende-pyroxenite	15	430379	5457586	-93.95719	49.26905
01-CAM-062A	Kakagi Sills	OTH-014	Lherzolite-metalherzolite	15	430387	5452567	-93.95621	49.22390
01-CAM-063A	Kakagi Sills	OTH-014	Metahornblende-pyroxenite	15	430374	5452500	-93.95637	49.22330
01-CAM-064A	Kakagi Sills	OTH-014	Metahornblende-pyroxenite	15	430430	5452511	-93.95561	49.22340
01-CAM-065A	Kakagi Sills	OTH-014	Metaleucogabbro	15	430681	5452564	-93.95217	49.22391
01-CAM-066A	Kakagi Sills	OTH-014	Metahornblende-pyroxenite to metapyroxenite	15	431888	5453151	-93.93570	49.22932
01-ERD-121A	Kakagi Sills	OTH-014	Metapyroxenite	15	437296	5462284	-93.86286	49.31205
01-ERD-122A	Kakagi Sills	OTH-014	Metapyroxenite	15	437238	5462260	-93.86365	49.31183
01-ERD-123A	Kakagi Sills	OTH-014	Metagabbro	15	437202	5462234	-93.86414	49.31159
01-ERD-124A	Kakagi Sills	OTH-014	Metamelagabbro	15	437137	5462188	-93.86503	49.31117
01-ERD-125A	Kakagi Sills	OTH-014	Metapyroxenite	15	437157	5462106	-93.86474	49.31043
01-ERD-125B	Kakagi Sills	OTH-014	Metamelagabbro to metapyroxenite breccia	15	437157	5462106	-93.86474	49.31043
01-ERD-126A	Kakagi Sills	OTH-014	Metamelagabbro	15	436375	5460898	-93.87531	49.29949
01-ERD-126B	Kakagi Sills	OTH-014	Porphyritic metabasalt or meta-andesite	15	436375	5460898	-93.87531	49.29949
01-ERD-127A	Kakagi Sills	OTH-014	Metamelagabbro	15	435801	5460020	-93.88306	49.29153
01-ERD-129A	Kakagi Sills	OTH-014	Metamelagabbro to metagabbro	15	435759	5460042	-93.88364	49.29172
01-ERD-130A	Kakagi Sills	OTH-014	Metapyroxenite	15	434218	5458326	-93.90455	49.27613
01-ERD-131A	Kakagi Sills	OTH-014	Metagabbro	15	434297	5458327	-93.90346	49.27614
01-ERD-132A	Kakagi Sills	OTH-014	Metamelagabbro to metagabbro	15	434368	5458309	-93.89920	49.27590
01-ERD-133A	Kakagi Sills	OTH-014	Metagabbro	15	434460	5458245	-93.90121	49.27542
01-ERD-134A	Kakagi Sills	OTH-014	Calcite-quartz-chlorite schist	15	432381	5460709	-93.93020	49.29736
01-ERD-135A	Kakagi Sills	OTH-014	Meta-olivine-pyroxenite	15	432693	5460700	-93.92591	49.29731
01-RAS-053A	Kakagi Sills	OTH-014	Pyroxenite or websterite	15	437339	5462380	-93.86228	49.31292
01-RAS-054A	Kakagi Sills	OTH-014	Melagabbro-pyroxenite	15	437339	5462380	-93.86228	49.31292
01-RAS-055A	Kakagi Sills	OTH-014	Pyroxenite	15	437356	5462444	-93.86206	49.31349

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	L titude
01-RAS-056A	Kakagi Sills	OTH-014	Mesogabbro	15	437407	5462567	-93.86138	49 31461
01-RAS-057A	Kakagi Sills	OTH-014	Mesogabbro	15	437424	5462543	-93.86114	49 31439
01-RAS-058A	Kakagi Sills	OTH-014	Tonalite?	15	437425	5462543	-93.86112	4 31439
01-RAS-059A	Kakagi Sills	OTH-014	Mesogabbro	15	437508	5462581	-93.85999	4 31474
01-RAS-060A	Kakagi Sills	OTH-014	Mesogabbro	15	437637	5462758	-93.85824	4 31635
01-RAS-061A	Kakagi Sills	OTH-014	Granite inclusion	15	437540	5462575	-93.85955	4 31469
01-RAS-061B	Kakagi Sills	OTH-014	Tonalite	15	437540	5462575	-93.85955	4 31469
01-RAS-062A	Kakagi Sills	OTH-014	Mesogabbro	15	437637	5460743	-93.85793	4 29822
01-RAS-063A	Kakagi Sills	OTH-014	Mesogabbro	15	437685	5460839	-93.85728	4 29909
01-RAS-064A	Kakagi Sills	OTH-014	Quartz-gabbro to quartz-diorite	15	437700	5460825	-93.85707	4 29897
01-RAS-065A	Kakagi Sills	OTH-014	Mesogabbro	15	437719	5460782	-93.85680	4 29858
01-RAS-067A	Kakagi Sills	OTH-014	Mesogabbro	15	437840	5461004	-93.85517	4 30059
01-RAS-068A	Kakagi Sills	OTH-014	Mesogabbro	15	437783	5460995	-93.85596	4 30051
01-RAS-069A	Kakagi Sills	OTH-014	Gabbroic chilled margin or basalt	15	437798	5461076	-93.85576	4 30124
01-RAS-070A	Kakagi Sills	OTH-014	Mesogabbro	15	437795	5461056	-93.85580	4 30106
01-RAS-071A	Kakagi Sills	OTH-014	Quartz-gabbro to quartz-diorite	15	437654	5460449	-93.85765	4 29558
01-RAS-072A	Kakagi Sills	OTH-014	Leucogabbro	15	437506	5460700	-93.85972	4 29782
01-RAS-073A	Kakagi Sills	OTH-014	Mesogabbro	15	437448	5460663	-93.86051	4 29749
01-RAS-074A	Kakagi Sills	OTH-014	Wehrlite	15	436798	5459799	-93.86932	4 28965
01-RAS-075A	Kakagi Sills	OTH-014	Melagabbro	15	432973	5456358	-93.92133	4 25829
01-RAS-076A	Kakagi Sills	OTH-014	Harzburgite	15	432796	5456330	-93.92376	4 25802
01-RAS-077A	Kakagi Sills	OTH-014	Harzburgite	15	432426	5458050	-93.92914	4 27345
01-RAS-078A	Kakagi Sills	OTH-014	Pyroxenite	15	432218	5458126	-93.93201	4 27411
01-RAS-079A	Kakagi Sills	OTH-014	Veined metagabbro-extremely altered	15	431719	5457954	-93.93884	4 27251
01-RAS-080A	Kakagi Sills	OTH-014	Dunite-lherzolite	15	431875	5457243	-93.93657	4 26613
01-CAM-067A	Pipestone Lake	OTH-015	Gabbro	15	450471	5432869	-93.67796	4 04862
01-CAM-068A	Pipestone Lake	OTH-015	Gabbro	15	450604	5432353	-93.67607	4 04399
01-CAM-069A	Pipestone Lake	OTH-015	Hornblende-gabbro	15	448863	5431464	-93.69979	4 03585
01-CAM-070A	Pipestone Lake	OTH-015	Hornblendite	15	448597	5430781	-93.70334	4 02969
01-CAM-071A	Pipestone Lake	OTH-015	Pyroxene-olivine-gabbro	15	448158	5430557	-93.70931	4 02764
01-CAM-072A	Pipestone Lake	OTH-015	Pyroxenite or melagabbro	15	447059	5429958	-93.72427	4 02216
01-CAM-073A	Pipestone Lake	OTH-015	Hornblende-gabbro	15	447560	5429532	-93.71736	4 01837
01-CAM-074A	Pipestone Lake	OTH-015	Hornblende-gabbro	15	447092	5429473	-93.72375	4 01780
01-CAM-075A	Pipestone Lake	OTH-015	Hornblende-gabbro	15	449070	5429715	-93.69673	4 02014
01-CAM-076A	Pipestone Lake	OTH-015	Melagabbro/hornblende-gabbro	15	448992	5429799	-93.69781	4 02089
01-CAM-077A	Pipestone Lake	OTH-015	Gabbro?	15	452603	5432086	-93.64869	4 04174
01-CAM-077B	Pipestone Lake	OTH-015	Gabbro?	15	452604	5432088	-93.64868	4 04176
01-CAM-078A	Pipestone Lake	OTH-015	Olivine mesocumulate	15	452324	5431666	-93.65246	4 03795

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-CAM-079A	Pipestone Lake	OTH-015	Diorite or gabbro	15	452249	5431539	-93.65347	49.03680
01-CAM-080A	Pipestone Lake	OTH-015	Diorite to hornblende-gabbro	15	452134	5431420	-93.65503	49.03572
01-CAM-081A	Pipestone Lake	OTH-015	Diorite to hornblende-gabbro	15	451759	5431237	-93.66014	49.03404
01-CAM-082A	Pipestone Lake	OTH-015	Gabbro?	15	449209	5430344	-93.69491	49.02581
01-CAM-083A	Pipestone Lake	OTH-015	Gabbro to hornblende-gabbro	15	448243	5429341	-93.70800	49.01671
01-CAM-084A	Pipestone Lake	OTH-015	Chlorite-calcite schist	15	447609	5429087	-93.71663	49.01437
01-CAM-085A	Pipestone Lake	OTH-015	Olivine adcumulate	15	446984	5427653	-93.72499	49.00142
01-CAM-086A	Pipestone Lake	OTH-015	Olivine adcumulate	15	446461	5427498	-93.73212	48.99998
01-CMV-051A	Pipestone Lake	OTH-015	Serpentinite	15	454276	5432793	-93.62588	49.04823
01-CMV-051B	Pipestone Lake	OTH-015	Serpentinite	15	454276	5432793	-93.62588	49.04823
01-CMV-051C	Pipestone Lake	OTH-015	Altered ultramafic	15	454276	5432793	-93.62588	49.04823
01-CMV-052A	Pipestone Lake	OTH-015	Calcite-chlorite-tremolite schist	15	452931	5432072	-93.64420	49.04164
01-CMV-053A	Pipestone Lake	OTH-015	Talc schist	15	452919	5432067	-93.64436	49.04160
01-CMV-053B	Pipestone Lake	OTH-015	Chlorite-carbonate schist	15	452919	5432067	-93.64436	49.04160
01-CMV-054A	Pipestone Lake	OTH-015	Talc-chlorite schist	15	454257	5432085	-93.62606	49.04186
01-CMV-055A	Pipestone Lake	OTH-015	Metamelagabbro	15	455538	5433828	-93.60872	49.05763
01-CMV-055B	Pipestone Lake	OTH-015	Metagabbro	15	455538	5433828	-93.60872	49.05763
01-CMV-055C	Pipestone Lake	OTH-015	Metamelagabbro to metagabbro	15	455538	5433828	-93.60872	49.05763
01-CMV-056A	Pipestone Lake	OTH-015	Chlorite-carbonate schist	15	458171	5435417	-93.57285	49.07211
01-CMV-057A	Pipestone Lake	OTH-015	Deformed metagabbro	15	458126	5435414	-93.57346	49.07208
01-RAS-081A	Pipestone Lake	OTH-015	Melamesogabbro	15	458315	5434618	-93.57080	49.06493
01-RAS-082A	Pipestone Lake	OTH-015	Mesogabbro	15	458197	5434538	-93.57240	49.06420
01-RAS-083A	Pipestone Lake	OTH-015	Mesogabbro	15	458134	5434403	-93.57325	49.06298
01-RAS-084A	Pipestone Lake	OTH-015	Metamesogabbro	15	457736	5434341	-93.57869	49.06240
01-RAS-085A	Pipestone Lake	OTH-015	Mesogabbro-leucogabbro	15	457585	5434201	-93.58074	49.06113
01-RAS-086A	Pipestone Lake	OTH-015	Leucogabbro	15	457345	5434234	-93.58403	49.06141
01-RAS-087A	Pipestone Lake	OTH-015	Lherzolite	15	461433	5440863	-93.52871	49.12131
01-RAS-088A	Pipestone Lake	OTH-015	Leucogabbro-mesogabbro	15	461484	5440934	-93.52802	49.12195
01-RAS-089A	Pipestone Lake	OTH-015	Gabbro?	15	461466	5440739	-93.52824	49.12019
01-RAS-090A	Pipestone Lake	OTH-015	Quartz-gabbro	15	460866	5440457	-93.53644	49.11762
01-RAS-091A	Pipestone Lake	OTH-015	Hornblende-leucogabbro	15	460866	5440457	-93.53644	49.11762
01-RAS-092A	Pipestone Lake	OTH-015	Quartz-gabbro	15	459951	5439575	-93.54889	49.10963
01-RAS-093A	Pipestone Lake	OTH-015	Leucogabbro	15	459628	5438718	-93.55323	49.10190
01-RAS-094A	Pipestone Lake	OTH-015	Quartz-metagabbro	15	459916	5438271	-93.54924	49.09789
01-RAS-095A	Pipestone Lake	OTH-015	Meta-andesite or quartz-metagabbro	15	459025	5437669	-93.56139	49.09242
01-RAS-096A	Pipestone Lake	OTH-015	Quartz-gabbro	15	459763	5437364	-93.55125	49.08973
01-RAS-097A	Pipestone Lake	OTH-015	Quartz-gabbro	15	459271	5436192	-93.55787	49.07915
01-RAS-098A	Pipestone Lake	OTH-015	Quartz-gabbro?	15	458559	5437613	-93.56776	49.09149

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-RAS-099A	Pipestone Lake	OTH-015	Hornblendite-metagabbro	15	492669	5393062	-93.09975	4[illegible]69246
01-RAS-099B	Pipestone Lake	OTH-015	Metapyroxenite-hornblendite	15	492669	5393062	-93.09975	4[illegible]69246
01-CAM-039A	Caliper Lake	OTH-016	Granite	15	433447	5430226	-93.91048	4[illegible]02326
01-CAM-040A	Caliper Lake	OTH-016	Quartz-rich granite	15	433459	5430237	-93.91032	4[illegible]02336
01-CAM-041A	Caliper Lake	OTH-016	Quartz-monzonite	15	433484	5430325	-93.90999	4[illegible]02415
01-CAM-042A	Caliper Lake	OTH-016	Monzonite	15	433498	5430402	-93.90981	4[illegible]02485
01-CAM-043A	Caliper Lake	OTH-016	Pyroxene-hornblendite	15	433560	5430548	-93.90899	4[illegible]02617
01-CAM-044A	Caliper Lake	OTH-016	Hornblende-pyroxenite	15	433560	5430573	-93.90899	4[illegible]02639
01-CAM-045A	Caliper Lake	OTH-016	Monzodiorite	15	433567	5430579	-93.90890	4[illegible]02645
01-CAM-046A	Caliper Lake	OTH-016	Monzodiorite	15	433576	5430615	-93.90878	4[illegible]02677
01-CAM-047A	Caliper Lake	OTH-016	Hornblende-pyroxenite	15	433575	5430633	-93.90880	4[illegible]02693
01-CAM-048A	Caliper Lake	OTH-016	Pyroxene-hornblendite	15	433623	5430860	-93.90818	4[illegible]02898
01-CAM-049A	Caliper Lake	OTH-016	Hornblende-pyroxenite	15	433663	5430981	-93.90765	4[illegible]03007
01-CMV-049A	Dobie Intrusion	OTH-017	Metapyroxenite	15	436074	5387355	-93.86786	4[illegible]63794
01-CMV-049B	Dobie Intrusion	OTH-017	Diabase	15	436074	5387355	-93.86786	4[illegible]63794
01-CMV-049D	Dobie Intrusion	OTH-017	Hornblende-gabbro to diorite	15	436074	5387355	-93.86786	4[illegible]63794
01-CMV-050A	Dobie Intrusion	OTH-017	Hornblende-gabbro to diorite	15	434366	5391935	-93.89177	4[illegible]67898
01-CMV-058A	Lash-Carpenter	OTH-018	Gabbronorite	15	444009	5388470	-93.76031	4[illegible]64670
01-CMV-059A	Lash-Carpenter	OTH-018	Metagabbro	15	443966	5388544	-93.76091	4[illegible]64936
01-CMV-060A	Lash-Carpenter	OTH-018	Gabbronorite	15	443935	5389886	-93.76151	4[illegible]66143
01-CMV-060B	Lash-Carpenter	OTH-018	Gabbro	15	443935	5389886	-93.76151	4[illegible]66143
01-CMV-061A	Lash-Carpenter	OTH-018	Monzonite	15	445380	5390087	-93.74192	4[illegible]66136
01-CMV-062A	Lash-Carpenter	OTH-018	Gabbronorite	15	445318	5390090	-93.74276	4[illegible]66338
01-CMV-063A	Lash-Carpenter	OTH-018	Metagabbro	15	444723	5390125	-93.75084	4[illegible]66365
01-CMV-063B	Lash-Carpenter	OTH-018	Gabbronorite	15	444723	5390125	-93.75084	4[illegible]66367
01-CMV-064A	Lash-Carpenter	OTH-018	Metagabbro	15	444128	5390160	-93.75893	4[illegible]66391
01-CMV-064B	Lash-Carpenter	OTH-018	Metamelagabbro	15	444128	5390160	-93.75893	4[illegible]66391
01-CMV-065A	Lash-Carpenter	OTH-018	Hornblende-gabbro	15	443667	5390135	-93.76518	4[illegible]66364
01-CMV-065B	Lash-Carpenter	OTH-018	Hornblende-gabbro	15	443667	5390135	-93.76518	4[illegible]66364
01-CAM-087A	Grassy Portage	OTH-019	Diorite or gabbro	15	491573	5393209	-93.11465	4[illegible]69377
01-CAM-088A	Grassy Portage	OTH-019	Melagabbro to gabbro	15	491767	5393766	-93.11202	4[illegible]69878
01-CAM-089A	Grassy Portage	OTH-019	Melagabbro	15	491188	5394145	-93.11990	4[illegible]70219
01-CAM-090A	Grassy Portage	OTH-019	Melagabbro to hornblendite	15	490856	5394320	-93.12442	4[illegible]70376
01-CAM-091A	Grassy Portage	OTH-019	Diorite to hornblende-gabbro	15	491868	5394000	-93.11066	4[illegible]70089
01-CAM-092A	Grassy Portage	OTH-019	Gabbro to leucogabbro	15	497554	5395019	-93.03338	4[illegible]71011
01-CAM-093A	Grassy Portage	OTH-019	Leucogabbro	15	497657	5394867	-93.03198	4[illegible]70874
01-CAM-094A	Grassy Portage	OTH-019	Melagabbro to gabbro	15	497896	5394657	-93.02873	4[illegible]70685
01-CAM-095A	Grassy Portage	OTH-019	Gabbro	15	497862	5394486	-93.02919	4[illegible]70531

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-ERD-179A	Grassy Portage	OTH-019	Staurolite-chloritoid-garnet schist	15	488471	5392037	-93.15671	48.68318
01-ERD-180A	Grassy Portage	OTH-019	Metagabbro-hornblende metagabbro	15	487088	5392052	-93.17556	48.68329
01-ERD-181A	Grassy Portage	OTH-019	Metamelagabbro or hornblende gabbro	15	486133	5392000	-93.18581	48.68280
01-ERD-182A	Grassy Portage	OTH-019	Metagabbro	15	485387	5391575	-93.19593	48.67906
01-ERD-183A	Grassy Portage	OTH-019	Metagabbro to hornblende-gabbro	15	484985	5391443	-93.20411	48.67776
01-RAS-100A	Grassy Portage	OTH-019	Metahornblende gabbro	15	494630	5393429	-93.07311	48.69578
01-RAS-100B	Grassy Portage	OTH-019	Anorthosite gabbro	15	494630	5393429	-93.07311	48.69578
01-RAS-101A	Grassy Portage	OTH-019	Meta-anorthositic gabbro	15	494475	5393525	-93.07522	48.69665
01-RAS-102A	Grassy Portage	OTH-019	Meta-anorthositic gabbro	15	494295	5393351	-93.07766	48.69508
01-RAS-103A	Grassy Portage	OTH-019	Metamesogabbro	15	493386	5392907	-93.09001	48.69108
01-RAS-104A	Grassy Portage	OTH-019	Metamesogabbro	15	491771	5392668	-93.11195	48.68891
01-RAS-105A	Grassy Portage	OTH-019	Meta-anorthositic gabbro	15	491463	5392273	-93.11612	48.68535
01-RAS-106A	Grassy Portage	OTH-019	Metamesogabbro	15	489368	5392108	-93.14458	48.68383
01-RAS-106B	Grassy Portage	OTH-019	Cannot be identified	15	489368	5392108	-93.14458	48.68383
01-RAS-107A	Grassy Portage	OTH-019	Metamesogabbro	15	489367	5392108	-93.14460	48.68383
01-RAS-108A	Grassy Portage	OTH-019	Metamesogabbro	15	498516	5395589	-93.02031	48.71524
01-RAS-109A	Grassy Portage	OTH-019	Megacrystic meta-anorthositic gabbro	15	498258	5395774	-93.02382	48.71690
01-RAS-110A	Grassy Portage	OTH-019	Meta-anorthositic gabbro	15	498001	5395387	-93.02731	48.71342
01-ERD-160A	Bad Vermilion	OTH-020	Metagabbro	15	501166	5392695	-92.98429	48.68920
01-ERD-161A	Bad Vermilion	OTH-020	Metagabbro	15	501359	5393255	-92.98167	48.69424
01-ERD-162A	Bad Vermilion	OTH-020	Metagabbro	15	503179	5393880	-92.95693	48.69985
01-ERD-163A	Bad Vermilion	OTH-020	Metagabbro	15	504035	5393435	-92.94530	48.69585
01-ERD-164A	Bad Vermilion	OTH-020	Metagabbro	15	504345	5393518	-92.94109	48.69659
01-ERD-165A	Bad Vermilion	OTH-020	Metagabbro	15	504399	5393823	-92.94035	48.69933
01-ERD-166A	Bad Vermilion	OTH-020	Metagabbro	15	504135	5393913	-92.94394	48.70015
01-ERD-167A	Bad Vermilion	OTH-020	Metagabbro	15	503817	5393101	-92.94827	48.69284
01-ERD-168A	Bad Vermilion	OTH-020	Metagabbro	15	503761	5392791	-92.94903	48.69005
01-ERD-169A	Bad Vermilion	OTH-020	Cannot be identified	15	504340	5392916	-92.94116	48.69117
01-ERD-170A	Bad Vermilion	OTH-020	Metagabbro	15	504810	5393060	-92.93478	48.69247
01-ERD-171A	Bad Vermilion	OTH-020	Metagabbro	15	504586	5392536	-92.93780	48.68777
01-ERD-172A	Bad Vermilion	OTH-020	Leucometagabbro or metagabbro	15	504550	5392317	-92.93832	48.68578
01-ERD-173A	Bad Vermilion	OTH-020	Metagabbro	15	505793	5392940	-92.92142	48.69138
01-ERD-174A	Bad Vermilion	OTH-020	Metagabbro or hornblende-gabbro	15	505850	5393370	-92.92064	48.69525
01-ERD-175A	Bad Vermilion	OTH-020	Hornblende-gabbro or metagabbro	15	505861	5393940	-92.92048	48.70037
01-ERD-176A	Bad Vermilion	OTH-020	Metasediment	15	505520	5393775	-92.92512	48.69889
01-ERD-177A	Bad Vermilion	OTH-020	Cannot be identified	15	505306	5394080	-92.92802	48.70164
01-ERD-178A	Bad Vermilion	OTH-020	Metagabbro	15	504973	5393960	-92.93255	48.70056
01-ERD-184A	Mountdew Lake	OTH-021	Metamelagabbro	15	525624	5473637	-92.64688	49.41687

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-ERD-185A	Mountdew Lake	OTH-021	Metagabbro	15	525499	5473913	-92.64859	49.41935
01-ERD-185B	Mountdew Lake	OTH-021	Lamprophyre dike?	15	525499	5473913	-92.64859	49.41935
01-ERD-186A	Mountdew Lake	OTH-021	Quartz-metagabbro	15	525532	5474034	-92.64812	49.42044
01-ERD-187A	Mountdew Lake	OTH-021	Cannot be identified	15	525518	5474114	-92.64831	49.42116
01-ERD-188A	Mountdew Lake	OTH-021	Metapyroxenite	15	525645	5474309	-92.64655	49.42291
01-MAH-011A	Nabish Lake	OTH-022	Hornblende-melagabbro to amphibolite	15	505031	5499555	-92.93047	49.65051
01-MAH-012A	Nabish Lake	OTH-022	Leucogabbro	15	504903	5499324	-92.93225	49.64843
01-MAH-012B	Nabish Lake	OTH-022	Melagabbro	15	504903	5499324	-92.93225	49.64843
01-MAH-013A	Nabish Lake	OTH-022	Metagabbro	15	504952	5499374	-92.93157	49.64888
01-MAH-014A	Nabish Lake	OTH-022	Dunite	15	505015	5499376	-92.93070	49.64890
01-MAH-015A	Nabish Lake	OTH-022	Pyroxenite	15	505130	5499126	-92.92911	49.64665
01-MAH-016A	Nabish Lake	OTH-022	Metagabbro	15	505233	5499302	-92.92768	49.64823
01-MAH-017A	Nabish Lake	OTH-022	Metapyroxenite	15	503846	5499061	-92.94689	49.64608
01-MAH-018A	Pike Lake Intrusion	OTH-023	Intermediate to felsic metavolcanic	15	630991	5518786	-91.17954	49.80922
01-MAH-019A	Pike Lake Intrusion	OTH-023	Metagabbro or metadiorite	15	630128	5521405	-91.19065	49.83295
01-MAH-019B	Pike Lake Intrusion	OTH-023	Feldspar-quartz porphyry	15	630128	5521405	-91.19065	49.83295
01-MAH-020A	Pike Lake Intrusion	OTH-023	Metagabbro	15	630269	5520443	-91.18901	49.82428
01-MAH-021A	Pike Lake Intrusion	OTH-023	Metagabbro	15	630795	5520223	-91.18178	49.82218
01-MAH-021B	Pike Lake Intrusion	OTH-023	Metagabbro	15	630803	5520213	-91.18167	49.82209
01-MAH-021C	Pike Lake intrusion	OTH-023	Metagabbro	15	630808	5520192	-91.18161	49.82190
01-MAH-021D	Pike Lake Intrusion	OTH-023	Metagabbro	15	630808	5520192	-91.18161	49.82190
01-MAH-021E	Pike Lake Intrusion	OTH-023	Metagabbro	15	630802	5520163	-91.18170	49.82164
01-MAH-022A	Pike Lake Intrusion	OTH-023	Metamelagabbro	15	627901	5518944	-91.22241	49.81131
01-MAH-023A	Pike Lake Intrusion	OTH-023	Metavolcanic	15	631173	5526818	-91.17429	49.88139
01-MAH-024A	Pike Lake Intrusion	OTH-023	Metamelagabbro	15	625394	5518564	-91.25737	49.80842
01-RAS-141A	Pike Lake Intrusion	OTH-023	Quartz-diorite	15	630991	5518778	-91.17954	49.80915
01-RAS-141B	Pike Lake Intrusion	OTH-023	Tonalite?	15	630991	5518778	-91.17954	49.80915
01-RAS-142A	Pike Lake Intrusion	OTH-023	Diorite	15	630787	5520138	-91.18192	49.82142
01-RAS-143A	Pike Lake Intrusion	OTH-023	Mesogabbro	15	630916	5520173	-91.18011	49.82171
01-RAS-144A	Pike Lake Intrusion	OTH-023	Quartz-diorite	15	631429	5521217	-91.17263	49.83098
01-RAS-145A	Pike Lake Intrusion	OTH-023	Quartz-diorite to leucogabbro	15	630271	5520436	-91.18899	49.82421
01-RAS-146A	Pike Lake Intrusion	OTH-023	Quartz-diorite to quartz-gabbro	15	630139	5521376	-91.19051	49.83269
01-ERD-236A	Cobb Bay-Sturgeon Lake North	OTH-024	Metapyroxenite to metagabbro	15	639460	5538886	-91.05465	49.98800
01-ERD-237A	Cobb Bay-Sturgeon Lake North	OTH-024	Metamelagabbro	15	640407	5539792	-91.04111	49.99592
01-ERD-238A	Cobb Bay-Sturgeon Lake North	OTH-024	Metamelagabbro to metapyroxenite	15	640811	5540187	-91.03533	49.99937
GWS-99-24	Handcuff Lake	OTH-025	Melagabbro	15	637238	5547006	-91.08260	50.06140
GWS-99-25	Handcuff Lake	OTH-025	Melagabbro	15	637395	5547465	-91.08020	50.06550
GWS-99-26	Handcuff Lake	OTH-025	Melagabbro	15	637395	5547465	-91.08020	50.06550

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
GWS-99-27	Handcuff Lake	OTH-025	Leucogabbro	15	637360	5547992	-91.08050	50.07020
GWS-99-28	Handcuff Lake	OTH-025	Mesogabbro	15	637354	5547904	-91.08060	50.06950
GWS-99-29	Handcuff Lake	OTH-025	Melagabbro	15	637369	5548193	-91.08030	50.07210
GWS-99-30	Handcuff Lake	OTH-025	Mesogabbro	15	637380	5548004	-91.08020	50.07040
GWS-99-31	Handcuff Lake	OTH-025	Melagabbro	15	637223	5549164	-91.08200	50.08080
GWS-99-32	Handcuff Lake	OTH-025	Melagabbro	15	636498	5549421	-91.09200	50.08330
GWS-99-33	Handcuff Lake	OTH-025	Melagabbro	15	636212	5549481	-91.09600	50.08390
GWS-99-34	Handcuff Lake	OTH-025	Mesogabbro	15	637223	5549164	-91.08200	50.08080
P-00-010	Samuels Lake	OTH-026	Diorite	15	566850	5385750	-92.09280	48.62320
P-00-043	Samuels Lake	OTH-026	Diorite	15	566650	5385650	-92.09560	48.62230
P-99-0-088	Samuels Lake	OTH-026	Clinopyroxenite	15	566585	5385775	-92.09640	48.62340
P-99-0-095	Samuels Lake	OTH-026	Wehrlite	15	566585	5385775	-92.09640	48.62340
P-99-0-099	Samuels Lake	OTH-026	Wehrlite	15	566585	5385775	-92.09640	48.62340
P-99-0-101	Samuels Lake	OTH-026	Clinopyroxenite	15	566585	5385775	-92.09640	48.62340
P-99-138	Samuels Lake	OTH-026	Hornblendite	15	566585	5385775	-92.09640	48.62340
P-00-058	McQuat Lake-Stawson	OTH-027	Clinopyroxenite	15	583050	5393600	-91.87150	48.69180
P-99-009	Nym Lake-Bergman Intrusion	OTH-028	Hornblendite	15	615200	5395700	-91.43420	48.70560
P-99-010	Nickelbee Lake-Fire Lake Dikes	OTH-029	Wehrlite	15	621000	5398000	-91.35470	48.72520
P-99-001	Eva Lake	OTH-030	Clinopyroxenite	15	646750	5399100	-91.00440	48.72960
P-99-113	Kawene Lake Complex	OTH-031	Clinopyroxenite	15	630064	5402101	-91.23020	48.76020
P-99-114	Kawene Lake Complex	OTH-031	Clinopyroxenite	15	630123	5402099	-91.22940	48.76020
P-99-117	Kawene Lake Complex	OTH-031	Clinopyroxenite	15	631921	5402205	-91.20490	48.76080
P-99-122	Kawene Lake Complex	OTH-031	Clinopyroxenite	15	630251	5402260	-91.22760	48.76160
P-99-033	Abiwin Lake	OTH-033	Clinopyroxenite	15	639837	5502258	-91.06240	49.65860
P-99-034	Abiwin Lake	OTH-033	Hornblendite	15	639837	5502258	-91.06240	49.65860
P-99-027	Mud Lake	OTH-034	Hornblendite	15	644050	5402500	-91.03990	48.76080
P-99-028	Mud Lake	OTH-034	Clinopyroxenite	15	644000	5402500	-91.04060	48.76080
P-99-060	North Elbow Lake	OTH-035	Olivine-websterite	15	645863	5402925	-91.01510	48.76420
P-99-084	North Elbow Lake	OTH-035	Clinopyroxenite	15	647981	5403531	-90.98610	48.76910
P-99-174	South Elbow Lake	OTH-035	Gabbro	15	647675	5499961	-90.95480	49.63610
01-CMV-105A	Shebandowan Mine Area	OTH-036	Peridotite or dunite	15	701486	5386228	-90.26723	48.59871
01-CMV-105B	Shebandowan Mine Area	OTH-036	Peridotite	15	701486	5386228	-90.26723	48.59871
01-CMV-106A	Shebandowan Mine Area	OTH-036	Peridotite or pyroxenite	15	701380	5386250	-90.26866	48.59894
01-CMV-107A	Shebandowan Mine Area	OTH-036	Wehrlite to dunite	15	700425	5385068	-90.28216	48.58862
01-CMV-108A	Shebandowan Mine Area	OTH-036	Wehrlite to dunite	15	700618	5385145	-90.27951	48.58925
01-CMV-109A	Shebandowan Mine Area	OTH-036	Dunite	15	702893	5386030	-90.24826	48.59647
01-CMV-110A	Shebandowan Mine Area	OTH-036	Metagabbro	15	718789	5390050	-90.03084	48.62724
01-CMV-111A	Shebandowan Mine Area	OTH-036	Metagabbro	15	718554	5389929	-90.03408	48.62623

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-CMV-112A	Shebandowan Mine Area	OTH-036	Metagabbro	15	715610	5389981	-90.07396	48.62772
01-ARR-001A	Haines Gabbro	OTH-037	Metabasalt	15	703418	5395014	-90.23674	48.67703
01-ARR-002A	Haines Gabbro	OTH-037	Metagabbro	15	702874	5394965	-90.24415	48.67677
01-ARR-003A	Haines Gabbro	OTH-037	Metagabbro	15	702264	5394898	-90.25246	48.67637
01-ARR-004A	Haines Gabbro	OTH-037	Metapyroxenite to metamelagabbro	15	701475	5394810	-90.26320	48.67583
01-ARR-005A	Haines Gabbro	OTH-037	Metagabbro	15	700902	5394644	-90.27106	48.67452
01-ARR-006A	Haines Gabbro	OTH-037	Metagabbro	15	700335	5394230	-90.27895	48.67099
01-ARR-007A	Haines Gabbro	OTH-037	Metagabbro	15	701097	5394368	-90.26855	48.67198
01-ARR-008A	Haines Gabbro	OTH-037	Metagabbro to metamelagabbro	15	701717	5394429	-90.26011	48.67233
01-ARR-009A	Haines Gabbro	OTH-037	Metagabbro	15	690895	5389954	-90.40901	48.63551
01-ARR-010A	Haines Gabbro	OTH-037	Anorthositic gabbro	15	690415	5390001	-90.41550	48.63608
01-ARR-011A	Haines Gabbro	OTH-037	Metagabbro	15	690336	5389714	-90.41670	48.63352
01-ARR-012A	Haines Gabbro	OTH-037	Metamelagabbro	15	690129	5389769	-90.41948	48.63408
01-ARR-013A	Haines Gabbro	OTH-037	Meta-anorthosite	15	692811	5389220	-90.38337	48.62832
01-ARR-014A	Haines Gabbro	OTH-037	Metaleucogabbro	15	692469	5389505	-90.38788	48.63099
01-ARR-015A	Haines Gabbro	OTH-037	Metavolcanic	15	692678	5389624	-90.38499	48.63200
01-ARR-016A	Haines Gabbro	OTH-037	Metagabbro	15	693463	5389572	-90.37437	48.63129
01-ARR-016B	Haines Gabbro	OTH-037	Meta-anorthosite	15	693463	5389585	-90.37436	48.63140
01-MAH-031A	Crystal Lake	OTH-038	Gabbro to olivine-gabbro	16	309507	5326307	-89.55690	48.06359
01-MAH-032A	Crystal Lake	OTH-038	Gabbro to olivine-gabbro	16	309430	5326336	-89.55795	48.06383
01-MAH-033A	Crystal Lake	OTH-038	Olivine-gabbro to olivine-gabbronorite	16	304427	5327884	-89.62574	48.07623
01-MAH-034A	Crystal Lake	OTH-038	Gabbro	16	304872	5327687	-89.61968	48.07460
01-MAH-035A	Crystal Lake	OTH-038	Felsic volcanic/felsic metavolcanic	16	306420	5327777	-89.59896	48.07588
01-MAH-036A	Crystal Lake	OTH-038	Olivine-gabbro	16	306906	5327177	-89.59217	48.07063
01-MAH-036B	Crystal Lake	OTH-038	Olivine-gabbro to gabbro	16	306911	5327175	-89.59210	48.07061
01-MAH-037A	Crystal Lake	OTH-038	Olivine-gabbro to troctolite	16	307457	5326837	-89.58463	48.06774
01-MAH-038A	Crystal Lake	OTH-038	Gabbro	16	307701	5326806	-89.58134	48.06754
01-MAH-039A	Crystal Lake	OTH-038	Leuco-olivine-gabbro to leucotroctolite	16	308327	5326671	-89.57289	48.06651
01-MAH-040A	Crystal Lake	OTH-038	Gabbronorite to gabbro	16	308864	5326273	-89.56551	48.06310
01-GRD-003A	Hele Township Area	OTH-039	Websterite to lherzolite	16	392792	5421765	-88.46403	48.94154
01-GRD-004A	Hele Township Area	OTH-039	Wehrlite	16	392842	5421774	-88.46335	48.94163
01-GRD-005A	Hele Township Area	OTH-039	Wehrlite to mela-olivine-gabbro	16	393439	5421475	-88.45512	48.93904
01-GRD-006A	Hele Township Area	OTH-039	Wehrlite	16	394005	5421350	-88.44736	48.93802
01-GRD-007A	Hele Township Area	OTH-039	Mela-olivine-gabbro to plagioclase-bearing wehrlite	16	394080	5421294	-88.44630	48.92695
01-GRD-008A	Hele Township Area	OTH-039	Clinopyroxenite	16	394143	5421173	-88.44543	48.93645
01-GRD-009A	Hele Township Area	OTH-039	Melagabbro	16	394231	5421079	-88.44420	48.93562
01-GRD-010A	Hele Township Area	OTH-039	Plagioclase-bearing clinopyroxenite to melagabbro	16	394551	5420927	-88.43980	48.93431
01-GRD-011A	Hele Township Area	OTH-039	Gabbro to olivine-gabbro	16	394887	5420784	-88.43517	48.93308

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-GRD-012A	Hele Township Area	OTH-039	Gabbro	16	395081	5420525	-88.43246	48.93078
01-RAS-333A	Seagull Intrusion-Wolf Mountain	OTH-040	Quartz-gabbro	16	357492	5432793	-88.94960	49.03350
01-RAS-334A	Seagull Intrusion-Wolf Mountain	OTH-040	Mesogabbro	16	357492	5432793	-88.94960	49.03350
01-RAS-335A	Seagull Intrusion-Wolf Mountain	OTH-040	Olivine-websterite	16	357492	5432793	-88.94960	49.03350
01-RAS-336A	Seagull Intrusion-Wolf Mountain	OTH-040	Olivine-websterite	16	357492	5432793	-88.94960	49.03350
01-RAS-337A	Seagull Intrusion-Wolf Mountain	OTH-040	Olivine-websterite	16	356891	5432134	-88.95760	49.02740
01-RAS-338A	Seagull Intrusion-Wolf Mountain	OTH-040	Dunite	16	356891	5432134	-88.95760	49.02740
01-RAS-339A	Seagull Intrusion-Wolf Mountain	OTH-040	Lherzolite	16	356891	5432134	-88.95760	49.02740
01-RAS-340A	Seagull Intrusion-Wolf Mountain	OTH-040	Lherzolite-wehrlite	16	356891	5432134	-88.95760	49.02740
01-RAS-341A	Seagull Intrusion-Wolf Mountain	OTH-040	Olivine-gabbro	16	356891	5432134	-88.95760	49.02740
01-RAS-342A	Seagull Intrusion-Wolf Mountain	OTH-040	Olivine-gabbro	16	356891	5432134	-88.95760	49.02740
01-RAS-343A	Seagull Intrusion-Wolf Mountain	OTH-040	Olivine-websterite	16	356891	5432134	-88.95760	49.02740
01-RAS-344A	Seagull Intrusion-Wolf Mountain	OTH-040	Wehrlite-dunite	16	356891	5432134	-88.95760	49.02740
01-RAS-345A	Seagull Intrusion-Wolf Mountain	OTH-040	Dunite	16	356891	5432134	-88.95760	49.02740
01-RAS-346A	Seagull Intrusion-Wolf Mountain	OTH-040	Dunite	16	356891	5432134	-88.95760	49.02740
01-RAS-347A	Seagull Intrusion-Wolf Mountain	OTH-040	Wehrlite-dunite	16	356891	5432134	-88.95760	49.02740
01-RAS-348A	Seagull Intrusion-Wolf Mountain	OTH-040	Dunite	16	356891	5432134	-88.95760	49.02740
01-RAS-349A	Seagull Intrusion-Wolf Mountain	OTH-040	Dunite-wehrlite	16	356891	5432134	-88.95760	49.02740
01-RAS-350A	Seagull Intrusion-Wolf Mountain	OTH-040	Dunite	16	356891	5432134	-88.95760	49.02740
01-RAS-351A	Seagull Intrusion-Wolf Mountain	OTH-040	Lherzolite	16	356891	5432134	-88.95760	49.02740
01-RAS-352A	Seagull Intrusion-Wolf Mountain	OTH-040	Lherzolite	16	356891	5432134	-88.95760	49.02740
01-RAS-353A	Seagull Intrusion-Wolf Mountain	OTH-040	Olivine-melagabbro	16	356891	5432134	-88.95760	49.02740
01-RAS-354A	Seagull Intrusion-Wolf Mountain	OTH-040	Olivine-gabbro	16	356891	5432134	-88.95760	49.02740
01-RAS-355A	Seagull Intrusion-Wolf Mountain	OTH-040	Wehrlite	16	356891	5432134	-88.95760	49.02740
01-RAS-356A	Seagull Intrusion-Wolf Mountain	OTH-040	Olivine-gabbro	16	356891	5432134	-88.95760	49.02740
01-RAS-357A	Seagull Intrusion-Wolf Mountain	OTH-040	Mesogabbro	16	356297	5432706	-88.96590	49.03240
01-RAS-358A	Seagull Intrusion-Wolf Mountain	OTH-040	Melagabbro	16	356297	5432706	-88.96590	49.03240
01-RAS-359A	Seagull Intrusion-Wolf Mountain	OTH-040	Melagabbro	16	356297	5432706	-88.96590	49.03240
01-RAS-360A	Seagull Intrusion-Wolf Mountain	OTH-040	Olivine-clinopyroxenite	16	356293	5432040	-88.96570	49.02640
01-RAS-361A	Seagull Intrusion-Wolf Mountain	OTH-040	Dunite-wehrlite	16	356293	5432040	-88.96570	49.02640
01-RAS-362A	Seagull Intrusion-Wolf Mountain	OTH-040	Dunite	16	356293	5432040	-88.96570	49.02640
01-RAS-363A	Seagull Intrusion-Wolf Mountain	OTH-040	Dunite	16	356293	5432040	-88.96570	49.02640
01-RAS-364A	Seagull Intrusion-Wolf Mountain	OTH-040	Dunite	16	356293	5432040	-88.96570	49.02640
01-RAS-365A	Seagull Intrusion-Wolf Mountain	OTH-040	Wehrlite	16	356293	5432040	-88.96570	49.02640
01-RAS-366A	Seagull Intrusion-Wolf Mountain	OTH-040	Lherzolite	16	356293	5432040	-88.96570	49.02640
01-RAS-367A	Seagull Intrusion-Wolf Mountain	OTH-040	Lherzolite	16	356293	5432040	-88.96570	49.02640
01-RAS-368A	Seagull Intrusion-Wolf Mountain	OTH-040	Wehrlite	16	356293	5432040	-88.96570	49.02640
01-CMV-131A	Buck Lake	OTH-041	Plagioclase-bearing clinopyroxenite to metagabbro	16	282629	5449497	-89.98172	49.16179

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-CMV-132A	Buck Lake	OTH-041	Tonalite or trondhjemite	16	282629	5449496	-89.98171	49.16178
01-CMV-133A	Buck Lake	OTH-041	Metamelagabbro to metapyroxenite	16	282630	5449496	-89.98170	49.16178
01-CMV-134A	Buck Lake	OTH-041	Hornblende-leucogabbro to metaleucogabbro	16	282634	5449517	-89.98166	49.16197
01-CMV-135A	Buck Lake	OTH-041	Metamelagabbro	16	282646	5449570	-89.98152	49.16245
01-CMV-136A	Buck Lake	OTH-041	Metaleucogabbro	16	282642	5449566	-89.98157	49.16242
01-CMV-137A	Buck Lake	OTH-041	Melagabbro	16	282652	5449564	-89.98144	49.16240
01-CMV-138A	Buck Lake	OTH-041	Metamelagabbro	16	282638	5449507	-89.98160	49.16189
01-CMV-139A	Buck Lake	OTH-041	Metapyroxenite	16	282642	5449533	-89.98156	49.16212
01-CMV-140A	Buck Lake	OTH-041	Metapyroxenite to metamelagabbro	16	282637	5449537	-89.98163	49.16216
01-RAS-316A	Tib Lake	OTH-042	Clinopyroxenite	16	296650	5456890	-89.79330	49.23290
01-RAS-317A	Tib Lake	OTH-042	Gabbronorite-pyroxenite	16	296650	5456890	-89.79330	49.23290
01-RAS-318A	Tib Lake	OTH-042	Gabbronorite	16	296650	5456890	-89.79330	49.23290
01-RAS-319A	Tib Lake	OTH-042	Gabbronorite-metagabbro	16	296650	5456890	-89.79330	49.23290
01-RAS-320A	Tib Lake	OTH-042	Mesogabbro	16	296650	5456890	-89.79330	49.23290
01-RAS-321A	Tib Lake	OTH-042	Lherzolite	16	296650	5456940	-89.79330	49.23340
01-RAS-322A	Tib Lake	OTH-042	Mesogabbro	16	296650	5456940	-89.79330	49.23340
01-RAS-323A	Tib Lake	OTH-042	Gabbro to gabbronorite	16	296650	5456940	-89.79330	49.23340
01-RAS-324A	Tib Lake	OTH-042	Pyroxenite	16	296650	5456940	-89.79330	49.23340
01-RAS-325A	Tib Lake	OTH-042	Websterite	16	296650	5456940	-89.79330	49.23340
01-RAS-326A	Tib Lake	OTH-042	Mesogabbro	16	295280	5458490	-89.81290	49.24680
01-RAS-327A	Tib Lake	OTH-042	Mesogabbro	16	295280	5458490	-89.81290	49.24680
01-RAS-328A	Tib Lake	OTH-042	Pyroxenite to gabbro	16	295280	5458490	-89.81290	49.24680
01-RAS-329A	Tib Lake	OTH-042	Mesogabbro	16	295280	5458490	-89.81290	49.24680
01-RAS-330A	Tib Lake	OTH-042	Mesogabbro	16	295280	5458490	-89.81290	49.24680
01-RAS-331A	Tib Lake	OTH-042	Mesogabbro	16	297350	5458310	-89.78440	49.24590
01-RAS-332A	Tib Lake	OTH-042	Olivine-websterite	16	296650	5457990	-89.79380	49.24280
01-RAS-147A	Ruffo Lake West	OTH-043	Mesogabbro	16	312266	5491712	-89.59554	49.55090
01-RAS-148A	Ruffo Lake West	OTH-043	Quartz-gabbro	16	312083	5491736	-89.59808	49.55106
01-RAS-149A	Ruffo Lake West	OTH-043	Metamesogabbro	16	312127	5491844	-89.59752	49.55205
01-RAS-150A	Ruffo Lake West	OTH-043	Metamesogabbro	16	312173	5491851	-89.59680	49.55243
01-RAS-151A	Ruffo Lake West	OTH-043	Metamesogabbro	16	312718	5492193	-89.58953	49.55537
01-RAS-152A	Ruffo Lake West	OTH-043	Mesogabbro	16	312780	5492225	-89.58869	49.55567
01-RAS-153A	Ruffo Lake East	OTH-043	Melagabbro	16	312881	5492294	-89.58732	49.55632
01-RAS-154A	Ruffo Lake East	OTH-043	Melagabbro	16	312936	5492340	-89.58659	49.55675
01-RAS-155A	Ruffo Lake East	OTH-043	Mesomelagabbro	16	313015	5492423	-89.58554	49.55752
01-RAS-155B1	Ruffo Lake East	OTH-043	Pyroxenite	16	313015	5492423	-89.58554	49.55752
01-RAS-155B2	Ruffo Lake East	OTH-043	Melamesogabbro-pyroxenite	16	313015	5492423	-89.58554	49.55752
01-RAS-156A	Ruffo Lake East	OTH-043	Metamesogabbro	16	313069	5492455	-89.58480	49.55783

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-RAS-157A	Ruffo Lake East	OTH-043	Mesogabbro	16	313165	5492454	-89.58348	49.55785
01-RAS-158A	Ruffo Lake East	OTH-043	Mesogabbro	16	313208	5492487	-89.58290	49.55816
01-RAS-159A	Ruffo Lake East	OTH-043	Mesogabbro	16	313332	5492527	-89.58121	49.55856
01-RAS-160A	Ruffo Lake East	OTH-043	Mesogabbro	16	313941	5492710	-89.57288	49.56039
01-RAS-161A	Ruffo Lake East	OTH-043	Mesogabbro	16	313977	5492544	-89.57230	49.55891
01-CMV-094A	Roaring River-Allely Lake	OTH-044	Granodiorite	16	294312	5500668	-89.84815	49.62553
01-CMV-095A	Roaring River-Allely Lake	OTH-044	Monzogranite	16	293894	5500948	-89.85407	49.62790
01-CMV-096A	Roaring River-Allely Lake	OTH-044	Metagabbro	16	292760	5502276	-89.87046	49.63944
01-CMV-096B	Roaring River-Allely Lake	OTH-044	Oxide-apatite-pyroxenite	16	292760	5502276	-89.87046	49.63944
01-CMV-097A	Roaring River-Allely Lake	OTH-044	Gabbronorite	16	292665	5502313	-89.87179	49.63974
01-CMV-098A	Roaring River-Allely Lake	OTH-044	Gabbronorite	16	292544	5502235	-89.87342	49.63900
01-CMV-098B1	Roaring River-Allely Lake	OTH-044	Gabbronorite	16	292544	5502235	-89.87342	49.63900
01-CMV-098B2	Roaring River-Allely Lake	OTH-044	Gabbronorite	16	292544	5502235	-89.87342	49.63900
01-CMV-098C	Roaring River-Allely Lake	OTH-044	Olivine-gabbronorite	16	292544	5502235	-89.87342	49.63900
01-CMV-099A	Roaring River-Allely Lake	OTH-044	Gabbronorite	16	292517	5502178	-89.87377	49.63848
01-CMV-100A	Roaring River-Allely Lake	OTH-044	Gabbronorite	16	292490	5502180	-89.87414	49.63849
01-CMV-101A	Roaring River-Allely Lake	OTH-044	Olivine-gabbronorite	16	292395	5502694	-89.87573	49.64307
01-CMV-103A	Roaring River-Allely Lake	OTH-044	Leucogabbronorite	16	292318	5502765	-89.87683	49.64369
01-CMV-104A	Roaring River-Allely Lake	OTH-044	Monzogabbro	16	292178	5502916	-89.87885	49.64499
01-CMV-146A	Roaring River-Allely Lake	OTH-044	Monzogabbro	16	291673	5500258	-89.88442	49.62094
01-MAH-027A	Roaring River-Allely Lake	OTH-044	Metagabbro/hornblende gabbro	15	696178	5506884	-90.28041	49.68454
01-MAH-028A	Roaring River-Allely Lake	OTH-044	Granodiorite to tonalite	15	698272	5507913	-90.25089	49.69310
01-MAH-029A	Roaring River-Allely Lake	OTH-044	Granite to granodiorite	15	698496	5508008	-90.24774	49.69388
01-MAH-030A	Roaring River-Allely Lake	OTH-044	Quartz-monzonite	15	698833	5508305	-90.24292	49.69643
01-CMV-093A	Logan Sills	OTH-045	Diabase	16	295615	5499457	-89.82950	49.61509
01-CMV-102A	Logan Sills	OTH-045	Diabase	16	292368	5502720	-89.87612	49.64330
01-MAH-025A	Empire Lake Gabbro	OTH-046	Granite to granodiorite	15	691048	5501383	-90.35413	49.63676
01-MAH-026A	Empire Lake Gabbro	OTH-046	Granodiorite gneiss	15	691898	5502267	-90.34194	49.64443
01-CAM-127A	Chrome Lake	OTH-047	Serpentinite	16	319770	5538968	-89.51377	49.97782
01-CAM-128A	Chrome Lake	OTH-047	Olivine-gabbronorite	16	319783	5538883	-89.51355	49.97706
01-CAM-129A	Chrome Lake	OTH-047	Serpentinite	16	319788	5538872	-89.51348	49.97696
01-CAM-130A	Chrome Lake	OTH-047	Serpentinite	16	319798	5538869	-89.51334	49.97694
01-CAM-131A	Chrome Lake	OTH-047	Serpentinite	16	319812	5538865	-89.51314	49.97691
01-CAM-132A	Chrome Lake	OTH-047	Serpentinite	16	319823	5538899	-89.51300	49.97722
01-CAM-133A	Chrome Lake	OTH-047	Serpentinite	16	319835	5538897	-89.51283	49.97720
01-CAM-134A	Chrome Lake	OTH-047	Serpentinite	16	319829	5538896	-89.51292	49.97719
01-CAM-135A	Chrome Lake	OTH-047	Chromite	16	319844	5538941	-89.51273	49.97760
01-CAM-135B	Chrome Lake	OTH-047	Serpentinite	16	319844	5538941	-89.51273	49.97760

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-CAM-136A	Chrome Lake	OTH-047	Serpentinite	16	319838	5538950	-89.51282	49.97768
01-CAM-137A	Chrome Lake	OTH-047	Serpentinite	16	319866	5538919	-89.51241	49.97741
01-CAM-138A	Puddy Lake	OTH-047	Serpentinite	16	317825	5537977	-89.54040	49.96832
01-CAM-139A	Puddy Lake	OTH-047	Serpentinite	16	317823	5537964	-89.54043	49.96821
01-CAM-140A	Puddy Lake	OTH-047	Pyroxenite-serpentinite	16	317788	5537933	-89.54090	49.96792
01-CAM-141A	Puddy Lake	OTH-047	Serpentinite	16	317692	5537889	-89.54221	49.96749
01-CAM-142A	Puddy Lake	OTH-047	Serpentinite	16	317554	5537887	-89.54414	49.96743
01-CAM-143A	Puddy Lake	OTH-047	Serpentinite	16	317033	5537873	-89.55139	49.96715
01-CAM-144A	Puddy Lake	OTH-047	Serpentinite	16	316993	5537726	-89.55187	49.96581
01-CAM-145A	Puddy Lake	OTH-047	Serpentinite	16	316982	5537673	-89.55200	49.96534
01-CAM-146A	Puddy Lake	OTH-047	Peridotite	16	316445	5537493	-89.55940	49.96355
01-CAM-147A	Puddy Lake	OTH-047	Granite	16	316250	5537242	-89.56199	49.96124
01-CAM-148A	Puddy Lake	OTH-047	Serpentinite	16	317711	5537658	-89.54184	49.96542
01-CMV-141A	Killala Lake	OTH-048	Plagioclase-bearing clinopyroxenite	16	539775	5442050	-86.45473	49.13202
01-CMV-142A	Killala Lake	OTH-048	Olivine-gabbro to troctolite	16	542375	5444550	-86.41883	49.15433
01-CMV-142B	Killala Lake	OTH-048	Troctolite	16	542375	5444550	-86.41883	49.15433
01-CMV-143A	Killala Lake	OTH-048	Troctolite	16	542850	5445050	-86.41226	49.15879
01-CMV-144A	Killala Lake	OTH-048	Melagabbro	16	542550	5447175	-86.41615	49.17793
01-CMV-144B	Killala Lake	OTH-048	Olivine-gabbro	16	542550	5447175	-86.41615	49.17793
01-CMV-145A	Killala Lake	OTH-048	Leucogabbro	16	540280	5442530	-86.44776	49.13630
01-CMV-121A	Coldwell Complex	OTH-049	Olivine-gabbronorite to olivine-gabbro	16	525098	5404585	-86.65823	48.79577
01-CMV-122A	Coldwell Complex	OTH-049	Anorthosite	16	525092	5404565	-86.65832	48.79559
01-CMV-122B	Coldwell Complex	OTH-049	Anorthosite	16	525092	5404565	-86.65832	48.79559
01-CMV-123A	Coldwell Complex	OTH-049	Gabbro to metagabbro	16	525443	5404793	-86.65352	48.79763
01-CMV-124A1	Coldwell Complex	OTH-049	Metagabbro	16	525630	5404767	-86.65098	48.79739
01-CMV-124A2	Coldwell Complex	OTH-049	Websterite to plagioclase-bearing websterite	16	525630	5404767	-86.65098	48.79739
01-CMV-125A	Coldwell Complex	OTH-049	Mafic metavolcanic metabasalt	16	541740	5404017	-86.43170	48.78977
01-CMV-126A	Coldwell Complex	OTH-049	Olivine-gabbro	16	549622	5396189	-86.32534	48.71877
01-CMV-127A	Coldwell Complex	OTH-049	Gabbro to gabbronorite	16	549208	5397769	-86.33078	48.73302
01-CMV-128A	Coldwell Complex	OTH-049	Olivine-gabbro to olivine-gabbronorite	16	550695	5405448	-86.30961	48.80197
01-CMV-128B	Coldwell Complex	OTH-049	Gabbro?	16	550695	5405448	-86.30961	48.80197
01-CMV-129A	Coldwell Complex	OTH-049	Olivine gabbronorite	16	550565	5405431	-86.31138	48.80183
01-CMV-130A	Coldwell Complex	OTH-049	Olivine bearing gabbro	16	550523	5405814	-86.31191	48.80528
01-RAS-231A	Musher Lake Pluton	OTH-050	Granodiorite	16	584435	5405959	-85.85011	48.80290
01-RAS-232A	White Lake	OTH-051	Metamesogabbro	16	599540	5398382	-85.64629	48.73253
01-RAS-233A	White Lake	OTH-051	Metamesogabbro	16	599569	5398511	-85.64586	48.73368
01-RAS-234A	White Lake	OTH-051	Metamelagabbro	16	599124	5399382	-85.65170	48.74159
01-RAS-237A	White Lake	OTH-051	Metamelagabbro	16	596472	5405870	-85.68624	48.80035

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-RAS-238A	White Lake	OTH-051	Metamelagabbro	16	596490	5405813	-85.68601	48.79984
01-RAS-239A	White Lake	OTH-051	Metamelagabbro	16	596496	5405780	-85.68594	48.79954
01-RAS-240A	White Lake	OTH-051	Metamelagabbro	16	596473	5405633	-85.68629	48.79822
01-RAS-241A	White Lake	OTH-051	Metamelagabbro	16	596314	5405646	-85.68845	48.79836
01-RAS-242A	White Lake	OTH-051	Metamelagabbro	16	596109	5405683	-85.69123	48.79873
01-RAS-243A	White Lake	OTH-051	Metamelagabbro	16	596112	5405602	-85.69121	48.79800
01-RAS-244A	White Lake	OTH-051	Dunite to lherzolite	16	596134	5405285	-85.69098	48.79514
01-RAS-245A	White Lake	OTH-051	Metamelagabbro	16	596033	5405374	-85.69234	48.79596
01-RAS-246A	White Lake	OTH-051	Metamesogabbro	16	599425	5402062	-85.64696	48.76564
01-RAS-247A	White Lake	OTH-051	Metamelagabbro	16	599266	5400952	-85.64939	48.75568
01-RAS-248A	White Lake	OTH-051	Metamelagabbro	16	599335	5401019	-85.64844	48.75627
01-RAS-249A	White Lake	OTH-051	Metahornblendite	16	600037	5401339	-85.63881	48.75904
01-RAS-250A	White Lake	OTH-051	Metameso-leucogabbro	16	600350	5401336	-85.63456	48.75896
01-RAS-251A	White Lake	OTH-051	Metahornblendite	16	600607	5400872	-85.63117	48.75475
01-RAS-252A	White Lake	OTH-051	Metahornblendite	16	600184	5400333	-85.63706	48.74997
01-RAS-235A	White River Intrusion	OTH-052	Hornblendite	16	611046	5393300	-85.49123	48.68488
01-RAS-236A	White River Intrusion	OTH-052	Hornblendite	16	596472	5405870	-85.68624	48.80035
01-CMV-113A	Shabotik	OTH-053	Amphibolite	16	617718	5417333	-85.39373	48.89977
01-CMV-114A	Shabotik	OTH-053	Metagabbro	16	617553	5417601	-85.39591	48.90221
01-CMV-115A	Bulldozer	OTH-054	Quartz-diorite or hornblende-diorite	16	615990	5422263	-85.41590	48.94443
01-CMV-115B	Bulldozer	OTH-054	Amphibolite	16	615990	5422263	-85.41590	48.94443
01-CMV-116A1	Bulldozer	OTH-054	Metamelagabbro to metagabbro	16	616051	5422433	-85.41502	48.94595
01-CMV-116A2	Bulldozer	OTH-054	Metagabbro to metaleucogabbro	16	616051	5422433	-85.41502	48.94595
01-CMV-116B	Bulldozer	OTH-054	Hornblendite	16	616051	5422433	-85.41502	48.94595
01-CMV-117A	Bulldozer	OTH-054	Gabbro	16	616525	5424457	-85.40797	48.96406
01-CMV-117B	Bulldozer	OTH-054	Metapyroxenite or hornblendite	16	616525	5424457	-85.40797	48.96406
01-CMV-117C	Bulldozer	OTH-054	Metagabbro or metahornblende-gabbro	16	616525	5424457	-85.40797	48.96406
01-CMV-117D	Bulldozer	OTH-054	Metapyroxenite	16	616525	5424457	-85.40797	48.96406
01-GRD-001A	Bulldozer	OTH-054	Metamelahornblende gabbro to amphibolite	16	615008	5422830	-85.42915	48.94971
01-GRD-001B	Bulldozer	OTH-054	Metagabbro to hornblende-gabbro	16	615008	5422830	-85.42915	48.94971
01-GRD-002A	Bulldozer	OTH-054	Gabbro	16	615625	5423919	-85.42041	48.95939
01-GRD-002B	Bulldozer	OTH-054	Metagabbro to hornblende-gabbro	16	615625	5423919	-85.42041	48.95939
01-GRD-002C	Bulldozer	OTH-054	Metapyroxenite-metaclinopyroxenite	16	615625	5423919	-85.42041	48.95939
01-CMV-118A	Moshkinabi	OTH-055	Metagabbro	16	605614	5442779	-85.55221	49.13078
01-CMV-118B	Moshkinabi	OTH-055	Meta-melagabbro	16	605614	5442779	-85.55221	49.13078
01-CMV-118C	Moshkinabi	OTH-055	Amphibolite	16	605614	5442779	-85.55221	49.13078
01-CMV-118D	Moshkinabi	OTH-055	Meta-melagabbro or amphibolite	16	605614	5442779	-85.55221	49.13078
01-CMV-118E	Moshkinabi	OTH-055	Metagabbro	16	605614	5442779	-85.55221	49.13078

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-CMV-118F	Moshkinabi	OTH-055	Metagabbro	16	605614	5442779	-85.55221	49.13078
01-CMV-118G	Moshkinabi	OTH-055	Metagabbro	16	605614	5442779	-85.55221	49.13078
01-CMV-118H	Moshkinabi	OTH-055	Meta-melagabbro	16	605614	5442779	-85.55221	49.13078
01-CMV-118I	Moshkinabi	OTH-055	Massive sulphide	16	605614	5442779	-85.55221	49.13078
01-CMV-119A	Moshkinabi	OTH-055	Meta-leucogabbro	16	605800	5442744	-85.54967	49.13044
01-CMV-119B	Moshkinabi	OTH-055	Dunite or peridotite	16	605800	5442744	-85.54967	49.13044
01-CMV-119C	Moshkinabi	OTH-055	Actinolite and talc schist	16	605800	5442744	-85.54967	49.13044
01-CMV-119D	Moshkinabi	OTH-055	Meta-melagabbro	16	605800	5442744	-85.54967	49.13044
01-CMV-119E	Moshkinabi	OTH-055	Altered olivine-gabbronorite	16	605800	5442744	-85.54967	49.13044
01-CMV-119F	Moshkinabi	OTH-055	Metagabbro	16	605800	5442744	-85.54967	49.13044
01-CMV-119G	Moshkinabi	OTH-055	Amphibolite	16	605800	5442744	-85.54967	49.13044
01-CMV-119H	Moshkinabi	OTH-055	Amphibolite	16	605800	5442744	-85.54967	49.13044
01-CMV-119I	Moshkinabi	OTH-055	Amphibolite	16	605800	5442744	-85.54967	49.13044
01-CMV-120A	Moshkinabi	OTH-055	Metagabbro	16	607306	5442565	-85.52908	49.12856
01-CMV-120B	Moshkinabi	OTH-055	Actinolite schist	16	607306	5442565	-85.52908	49.12856
01-CAM-116A	McVicar Lake	OTH-056	Hornblende-gabbro	15	607340	5714700	-91.45119	51.57512
01-CAM-117A	McVicar Lake	OTH-056	Monzogranite	15	607242	5714917	-91.45253	51.57709
01-CAM-118A	McVicar Lake	OTH-056	Quartz-gabbro to melagabbro	15	607963	5714647	-91.44222	51.57453
01-CAM-119A	McVicar Lake	OTH-056	Hornblende-gabbro or quartz-gabbro	15	607755	5714213	-91.44535	51.57067
01-CAM-120A	McVicar Lake	OTH-056	Quartz-monzogabbro	15	607562	5713607	-91.44832	51.56526
01-CAM-121A	McVicar Lake	OTH-056	Hornblende-gabbro	15	607361	5713344	-91.45130	51.56293
01-CAM-122A	McVicar Lake	OTH-056	Gabbro	15	605788	5711849	-91.47443	51.54979
01-CAM-123A	McVicar Lake	OTH-056	Chlorite-quartz-carbonate shear veins	15	605659	5711792	-91.47631	51.54930
01-CAM-124A	McVicar Lake	OTH-056	Hornblende-gabbro	15	605850	5711570	-91.47362	51.54727
01-CAM-125A	McVicar Lake	OTH-056	Hornblende-gabbro	15	613182	5712369	-91.36767	51.55303
01-CAM-126A	McVicar Lake	OTH-056	Hornblende-gabbro	15	612663	5712243	-91.37519	51.55200
01-RAS-176A	McVicar Lake	OTH-056	Quartz-gabbro	15	608606	5714419	-91.43301	51.57236
01-RAS-177A	McVicar Lake	OTH-056	Mesogabbro	15	608769	5714213	-91.43072	51.57047
01-RAS-178A	McVicar Lake	OTH-056	Quartz-diorite	15	608068	5713759	-91.44097	51.56653
01-RAS-179A	McVicar Lake	OTH-056	Quartz-diorite to leucogabbro	15	608018	5713449	-91.44179	51.56375
01-RAS-180A	McVicar Lake	OTH-056	Mesogabbro	15	608002	5713325	-91.44206	51.56264
01-RAS-181A	McVicar Lake	OTH-056	Mesogabbro	15	608133	5713200	-91.44021	51.56149
01-RAS-182A	McVicar Lake	OTH-056	Leucogabbro	15	607630	5713026	-91.44752	51.56002
01-RAS-183A	McVicar Lake	OTH-056	Mesogabbro	15	607690	5712423	-91.44684	51.55459
01-RAS-184A	McVicar Lake	OTH-056	Mesogabbro	15	607537	5711070	-91.44946	51.54246
01-RAS-185A	McVicar Lake	OTH-056	Meso-leucogabbro	15	607310	5711352	-91.45264	51.54504
01-RAS-186A	McVicar Lake	OTH-056	Leuco to mesogabbro	15	606358	5711333	-91.46637	51.54505
01-RAS-187A	McVicar Lake	OTH-056	Mesogabbro	15	609971	5712308	-91.41398	51.55312

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-RAS-188A	McVicar Lake	OTH-056	Mesogabbro	15	609965	5712368	-91.41405	51.55366
01-RAS-189A	McVicar Lake	OTH-056	Leucogabbro	15	609982	5712215	-91.41385	51.55228
01-RAS-190A	McVicar Lake	OTH-056	Quartz-gabbro	15	609608	5713212	-91.41893	51.56131
01-RAS-191A	McVicar Lake	OTH-056	Mesogabbro-hornblende gabbro	15	609627	5713304	-91.41863	51.56214
01-RAS-192A	McVicar Lake	OTH-056	Mesogabbro	15	609679	5713408	-91.41785	51.56306
01-RAS-193A	McVicar Lake	OTH-056	Mesogabbro	15	609892	5713810	-91.41465	51.56663
01-RAS-194A	McVicar Lake	OTH-056	Leucogabbro	15	610986	5713224	-91.39906	51.56115
01-RAS-195A	McVicar Lake	OTH-056	Meso-leucogabbro	15	609649	5713292	-91.41832	51.56202
01-RAS-196A	McVicar Lake	OTH-056	Anorthosite to leuco-mesogabbro	15	611052	5712605	-91.39830	51.55557
01-RAS-197A	McVicar Lake	OTH-056	Mesogabbro	15	611886	5711899	-91.38650	51.54906
84-GRS-0001	Kawashe Lake	OTH-057		15	632025	5689525	-91.10440	51.34360
84-GRS-0051	Kawashe Lake	OTH-057		15	635900	5685340	-91.05040	51.30510
84-GRS-1059	Kawashe Lake	OTH-057		15	635400	5685160	-91.05760	51.30360
84-GRS-1060	Kawashe Lake	OTH-057		15	636240	5685200	-91.04560	51.30370
84-GRS-1062	Kawashe Lake	OTH-057		15	636390	5684660	-91.04360	51.29880
84-GRS-1063	Kawashe Lake	OTH-057		15	636630	5684560	-91.04020	51.29790
84-GRS-1064	Kawashe Lake	OTH-057		15	636775	5685100	-91.03790	51.30270
84-GRS-1067	Kawashe Lake	OTH-057		15	638100	5684640	-91.01910	51.29820
84-GRS-1084	Kawashe Lake	OTH-057		15	633425	5684225	-91.08630	51.29560
84-GRS-1094	Kawashe Lake	OTH-057		15	636550	5683550	-91.04180	51.28880
84-GRS-1108	Kawashe Lake	OTH-057		15	637175	5680575	-91.03390	51.26190
84-GRS-1111	Kawashe Lake	OTH-057		15	638360	5681175	-91.01670	51.26700
01-RAS-198A	Dempster Lake Gabbro	OTH-058	Metamesogabbro	15	644465	5679862	-90.92997	51.25380
01-RAS-199A	Dempster Lake Gabbro	OTH-058	Metagabbro?	15	644315	5679722	-90.93217	51.25258
01-RAS-200A	Dempster Lake Gabbro	OTH-058	Metamesogabbro	15	644204	5679697	-90.93377	51.25239
01-RAS-201A	Dempster Lake Gabbro	OTH-058	Metaleucogabbro	15	644142	5679690	-90.93466	51.25234
01-RAS-202A	Dempster Lake Gabbro	OTH-058	Metamelagabbro	15	643990	5679572	-90.93688	51.25132
01-RAS-203A	Dempster Lake Gabbro	OTH-058	Meta-andesite	15	643966	5679350	-90.93732	51.24933
01-RAS-208A	Dempster Lake Gabbro	OTH-058	Hornblende-gabbro	15	643742	5679359	-90.94052	51.24946
84-GRS-0151	Dempster Lake Gabbro	OTH-058		15	653675	5684160	-90.79610	51.28990
84-GRS-1210	Dempster Lake Gabbro	OTH-058		15	653950	5583925	-90.83430	50.38910
84-GRS-1243	Dempster Lake Gabbro	OTH-058		15	640540	5676700	-90.98730	51.22630
84-GRS-1246	Dempster Lake Gabbro	OTH-058		15	640525	5676600	-90.98750	51.22540
84-GRS-1250	Dempster Lake Gabbro	OTH-058		15	640900	5676740	-90.98210	51.22660
01-RAS-162A	Thierry Mine	OTH-059	Metagabbro-metapyroxenite	15	684124	5708516	-90.34738	51.49977
01-RAS-163A	July Falls	OTH-060	Quartz-diorite	16	300322	5725793	-89.88638	51.64964
01-RAS-164A	July Falls	OTH-060	Quartz-diorite	16	301873	5726883	-89.86461	51.65998
01-RAS-165A	July Falls	OTH-060	Quartz-gabbro	16	302162	5726593	-89.86027	51.65748

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-RAS-166A	July Falls	OTH-060	Meso-leucogabbro	16	302230	5726517	-89.85924	51.65682
01-RAS-167A	July Falls	OTH-060	Clinopyroxenite	16	302291	5726449	-89.85833	51.65623
01-RAS-168A	July Falls	OTH-060	Quartz-diorite?	16	300181	5725706	-89.88836	51.64881
01-RAS-169A	July Falls	OTH-060	Quartz-diorite?	16	300215	5725736	-89.88789	51.64910
01-RAS-170A	July Falls	OTH-060	Andesite	16	298831	5725425	-89.90769	51.64581
01-RAS-171A	July Falls	OTH-060	Quartz-diorite	16	298740	5725419	-89.90900	51.64572
01-RAS-172A	July Falls	OTH-060	Quartz-diorite	16	298303	5724023	-89.91450	51.63303
01-RAS-173A	July Falls	OTH-060	Quartz-diorite	16	298313	5724019	-89.91436	51.63300
01-RAS-174A	July Falls	OTH-060	Quartz-diorite	16	298324	5723976	-89.91417	51.63262
01-RAS-175A	July Falls	OTH-060	Quartz-diorite	16	298354	5723916	-89.91371	51.63209
01-GRD-013A	Lower Caribou Stock	OTH-061	Pyroxenite	16	345550	5584641	-89.17305	50.39553
01-GRD-014A	Lower Caribou Stock	OTH-061	Melagabbro to plagioclase-bearing clinopyroxenite	16	346213	5584123	-89.16351	50.39105
01-GRD-014B	Lower Caribou Stock	OTH-061	Clinopyroxenite	16	346213	5584123	-89.16351	50.39105
01-GRD-015A	Lower Caribou Stock	OTH-061	Clinopyroxenite	16	346387	5583561	-89.16084	50.38605
01-GRD-016A	Lower Caribou Stock	OTH-061	Pyroxenite	16	346424	5583465	-89.16028	50.38519
01-GRD-017A	Lower Caribou Stock	OTH-061	Quartz-monzonite	16	343236	5582828	-89.20482	50.37863
01-GRD-018A	Lower Caribou Stock	OTH-061	Syenitic gabbro	16	343614	5582997	-89.19958	50.38025
01-GRD-019A	Lower Caribou Stock	OTH-061	Clinopyroxenite	16	344812	5581416	-89.18209	50.36636
01-GRD-019B	Lower Caribou Stock	OTH-061	Clinopyroxenite	16	344812	5581416	-89.18209	50.36636
01-GRD-020A	Lower Caribou Stock	OTH-061	Metagabbro or metapyroxenite	16	344737	5581487	-89.18318	50.36697
01-GRD-020B	Lower Caribou Stock	OTH-061	Clinopyroxenite to olivine-clinopyroxenite	16	344737	5581487	-89.18318	50.36697
01-GRD-021A	Lower Caribou Stock	OTH-061	Alkali feldspar-syenite	16	345538	5582399	-89.17230	50.37538
01-RAS-209A	Caribou Stock	OTH-062	Hornblende-gabbro	16	354604	5591773	-89.04851	50.46194
01-RAS-210A	Caribou Stock	OTH-062	Hornblende-gabbro	16	354637	5591580	-89.04797	50.46021
01-RAS-211A	Caribou Stock	OTH-062	Hornblende-gabbro	16	354735	5591447	-89.04654	50.45904
01-RAS-212A	Caribou Stock	OTH-062	Hornblende-gabbro	16	354755	5591492	-89.04628	50.45945
01-RAS-212B	Caribou Stock	OTH-062	Quartz-gabbro	16	354755	5591492	-89.04628	50.45945
01-RAS-213A	Caribou Stock	OTH-062	Hornblende-gabbro	16	354679	5591854	-89.04749	50.46269
01-RAS-214A	Caribou Stock	OTH-062	Quartz-hornblende-gabbro	16	357398	5596250	-89.01088	50.50287
01-RAS-215A	Caribou Stock	OTH-062	Quartz-hornblende-gabbro	16	357025	5596003	-89.01604	50.50035
01-RAS-216A	Caribou Stock	OTH-062	Hornblende-gabbro	16	356875	5595[illegible]57	-89.01802	50.49741
01-RAS-217A	Caribou Stock	OTH-062	Quartz-hornblende-gabbro	16	356249	5593898	-89.02617	50.48145
01-RAS-218A	Caribou Stock	OTH-062	Leucogabbro-anorthosite	16	356249	5593898	-89.02617	50.48145
01-RAS-219A	Caribou Stock	OTH-062	Quartz-hornblende-gabbro	16	355446	5593424	-89.03729	50.47699
01-RAS-220A	Caribou Stock	OTH-062	Quartz-hornblende-gabbro	16	354432	5592033	-89.05104	50.46424
01-RAS-221A	Caribou Stock	OTH-062	Hornblende-gabbro	16	354170	5592070	-89.05474	50.46450
01-GRD-022A	Junior Lake Area	OTH-063	Serpentinite	16	424478	5583200	-88.06256	50.39802
01-GRD-022B	Junior Lake Area	OTH-063	Amphibolite	16	424478	5583200	-88.06256	50.39802

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-GRD-022C	Junior Lake Area	OTH-063	Peridotite	16	424478	5583200	-88.06256	50.39802
01-RAS-222A	Junior Lake Area	OTH-063	Anorthositic gabbro	16	428548	5582783	-88.00523	50.39478
01-RAS-223A	Junior Lake Area	OTH-063	Melagabbro to plagioclase-bearing clinopyroxenite	16	428629	5582860	-88.00410	50.39548
01-RAS-224A	Junior Lake Area	OTH-063	Anorthositic gabbro	16	428048	5582484	-88.01220	50.39203
01-RAS-225A	Junior Lake Area	OTH-063	Anorthositic gabbro	16	428048	5582484	-88.01220	50.39203
01-RAS-226A	Junior Lake Area	OTH-063	Anorthositic gabbro	16	428048	5582484	-88.01220	50.39203
01-RAS-227A	Junior Lake Area	OTH-063	Melagabbro to anorthositic gabbro	16	428795	5582528	-88.00171	50.39251
01-RAS-228A	Junior Lake Area	OTH-063	Anorthosite to leuco-mesogabbro	16	428720	5582527	-88.00276	50.39250
01-RAS-229A	Junior Lake Area	OTH-063	Melagabbro	16	427643	5582276	-88.01786	50.39011
01-RAS-230A	Junior Lake Area	OTH-063	Melamesogabbro	16	427844	5582332	-88.01504	50.39064
01-RAS-271A	Junior Lake Area	OTH-063	Mesogabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-272A	Junior Lake Area	OTH-063	Mesogabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-273A	Junior Lake Area	OTH-063	Melagabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-274A	Junior Lake Area	OTH-063	Semi-massive sul in melagabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-275A	Junior Lake Area	OTH-063	Melagabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-276A	Junior Lake Area	OTH-063	Melagabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-277A	Junior Lake Area	OTH-063	Semi-massive sul magnetite	16	432484	5581322	-87.94960	50.38211
01-RAS-278A	Junior Lake Area	OTH-063	Leuco to mesogabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-279A	Junior Lake Area	OTH-063	Mesogabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-280A	Junior Lake Area	OTH-063	Mesogabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-281A	Junior Lake Area	OTH-063	Melamesogabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-282A	Junior Lake Area	OTH-063	Melagabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-283A	Junior Lake Area	OTH-063	Megacrystic gabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-284A	Junior Lake Area	OTH-063	Melagabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-285A	Junior Lake Area	OTH-063	Mesogabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-286A	Junior Lake Area	OTH-063	Melagabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-287A	Junior Lake Area	OTH-063	Magnetite gabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-288A	Junior Lake Area	OTH-063	Melagabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-289A	Junior Lake Area	OTH-063	Melamesogabbro	16	432484	5581322	-87.94960	50.38211
01-RAS-290A	Junior Lake Area	OTH-063	Melagabbro	16	432484	5581322	-87.94960	50.38211
89-BRB-0313	Junior Lake Area	OTH-063	Pyroxenite	16	435625	5580310	-87.90526	50.37332
89-BRB-0334	Junior Lake Area	OTH-063	Peridotite	16	437050	5580470	-87.88525	50.37491
89-BRB-0067	Toronto Lake	OTH-064	Gabbro	16	446710	5586055	-87.75021	50.42609
89-BRB-0226	Toronto Lake	OTH-064	Gabbro	16	440520	5579750	-87.83635	50.36880
89-BRB-0234	Toronto Lake	OTH-064	Gabbro	16	438850	5581930	-87.86018	50.38823
89-BRB-0275	Toronto Lake	OTH-064	Gabbro	16	446120	5576835	-87.75719	50.34312
89-BRB-0288	Toronto Lake	OTH-064	Peridotite	16	446430	5576565	-87.75279	50.34073
89-BRB-0300	Toronto Lake	OTH-064	Gabbro	16	438475	5576970	-87.86464	50.86464

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
89-BRB-0344	Toronto Lake	OTH-064	Peridotite	16	438620	5576960	-87.86259	50.34352
89-BRB-0360	Toronto Lake	OTH-064	Gabbro	16	444035	5578500	-87.78674	50.35791
89-BRB-0364	Toronto Lake	OTH-064	Diabase	16	438380	5577600	-87.86607	50.34924
89-BRB-0367	Toronto Lake	OTH-064	Gabbro	16	436310	5575660	-87.89464	50.33159
89-BRB-0375	Toronto Lake	OTH-064	Gabbro	16	445725	5577210	-87.76290	50.34647
99-GRS-0017A	Marshall Lake	OTH-065	Mafic intrusive	16	461723	5587141	-87.53890	50.43700
99-GRS-0021A	Marshall Lake	OTH-065	Ultramafic intrusive	16	461311	5587514	-87.54480	50.44030
99-GRS-0023A	Marshall Lake	OTH-065	Mafic intrusive	16	460670	5587289	-87.55380	50.43820
97-GRS-0034A	O'Sullivan Lake	OTH-066	Felsic Tuff	16	495006	5590119	-87.07030	50.46500
97-GRS-0073A	O'Sullivan Lake	OTH-066	Felsic intrusive	16	499950	5589867	-87.05700	50.45570
97-GRS-0115A	O'Sullivan Lake	OTH-066	Ultramafic intrusive	16	489293	5586357	-87.15070	50.43110
97-GRS-0228A	O'Sullivan Lake	OTH-066	Gabbro	16	494416	5588242	-87.07860	50.44810
97-GRS-0250A	O'Sullivan Lake	OTH-066	Gabbro dike	16	503152	5585104	-86.95560	50.41990
98-GRS-0131A	Gzowski	OTH-067	Gabbro	16	467365	5567879	-87.45780	50.26410
98-GRS-0168A	Gzowski	OTH-067	Ultramafic intrusive	16	463265	5569457	-87.51550	50.27880
98-GRS-0171A	Gzowski	OTH-067	Gabbro	16	463232	5569802	-87.51600	50.28110
98-GRS-0172A	Gzowski	OTH-067	Melanogabbro	16	463223	5569905	-87.51610	50.28210
98-GRS-0187A	Gzowski	OTH-067	Felsic metavolcanic	16	463187	5569201	-87.51660	50.27570
98-GRS-2096A	Gzowski	OTH-067	Basalt	16	450542	5577691	-87.69510	50.35110
98-GRS-2097A	Gzowski	OTH-067	Basalt	16	450519	5577588	-87.69540	50.35020
01-GRD-023A	Jackson Gabbro Ledingham	OTH-068	Metapyroxenite	16	429256	5540670	-87.98742	50.01617
01-GRD-023B	Jackson Gabbro Ledingham	OTH-068	Metamelagabbro to metapyroxenite	16	429256	5540670	-87.98742	50.01617
01-GRD-024A	Jackson Gabbro Ledingham	OTH-068	Metamelagabbro	16	429518	5540541	-87.98374	50.01504
01-GRD-025A	Jackson Gabbro Ledingham	OTH-068	Gabbronorite	16	430105	5539708	-87.97540	50.00761
95-GRS-0308A	Jackson Gabbro Ledingham	OTH-068	Gabbro	16	435036	5540754	-87.90670	50.01750
95-GRS-0309A	Jackson Gabbro Ledingham	OTH-068	Rhyolitic tuff	16	435044	5540462	-87.90660	50.01490
95-GRS-1319	Jackson Gabbro Ledingham	OTH-068	Gabbro	16	442311	5538150	-87.80480	49.99480
95-GRS-2070A	Jackson Gabbro Ledingham	OTH-068		16	441644	5540936	-87.81170	50.01980
95-GRS-0263A	Crooked Green	OTH-069	Gabbro	16	441410	5526445	-87.81590	49.90740
95-GRS-0266A	Crooked Green	OTH-069	Gabbro	16	441577	5526954	-87.81330	49.89410
01-CAM-149A	Jacobus	OTH-070	Quartz gabbro	16	446945	5518917	-87.74014	49.99092
01-CAM-150A	Jacobus	OTH-070	Quartz gabbro to diorite	16	446992	5519233	-87.73695	49.82522
01-CAM-151A	Jacobus	OTH-070	Tonalite or quartz diorite	16	446984	5519433	-87.73709	49.82702
01-CAM-152A	Jacobus	OTH-070	Metadiorite	16	447162	5519502	-87.73462	49.82765
01-CAM-152B	Jacobus	OTH-070	Melagabbro	16	447[illegible]9	5519518	-87.73439	49.82780
01-CAM-153A	Jacobus	OTH-070	Quartz diorite to tonalite	16	447155	5519497	-87.73472	49.82761
01-CAM-154A	Jacobus	OTH-070	Quartz diorite to tonalite	16	447164	5519494	-87.73464	49.82758
01-CAM-155A	Jacobus	OTH-070	Melagabbro	16	447131	5519482	-87.73502	49.82747

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-CAM-156A	Jacobus	OTH-070	Quartz-diorite to tonalite	16	447118	5519476	-87.73523	49.82742
01-CAM-157A	Jacobus	OTH-070	Felsic to intermediate metavolcanic	16	446831	5519460	-87.73922	49.82725
01-CAM-158A	Nipissing Diabase-Karalash Corners	OTH-071	Gabbronorite	16	706454	5183092	-84.29592	46.77142
01-CAM-159A	Nipissing Diabase-Karalash Corners	OTH-071	Gabbro or gabbronorite	16	706947	5183000	-84.28951	46.77044
01-CAM-160A	Nipissing Diabase-Karalash Corners	OTH-071	Gabbro or gabbronorite	16	708321	5183212	-84.27144	46.77192
01-CAM-161A	Nipissing Diabase-Karalash Corners	OTH-071	Gabbronorite	16	708295	5183423	-84.27168	46.77382
01-CAM-162A	Nipissing Diabase-Karalash Corners	OTH-071	Hornblende-gabbro	16	708670	5183809	-84.26660	46.77718
01-CAM-163A	Nipissing Diabase-Bruce Mines-Thessalon	OTH-072	Gabbro or gabbronorite	17	301299	5126434	-83.57834	46.26439
01-CAM-164A	Nipissing Diabase-Bruce Mines-Thessalon	OTH-072	Gabbronorite or clinopyroxene-norite	17	301487	5129724	-83.57729	46.29403
01-CAM-165A	Nipissing Diabase-Bruce Mines-Thessalon	OTH-072	Gabbronorite	17	304039	5127747	-83.54337	46.27699
01-CAM-166A	Nipissing Diabase-Bruce Mines-Thessalon	OTH-072	Gabbronorite?	17	305444	5130620	-83.52634	46.30323
01-CAM-167A	Nipissing Diabase-Bruce Mines-Thessalon	OTH-072	Gabbro	17	298974	5130074	-83.61004	46.29643
01-CAM-168A	Nipissing Diabase-Bruce Mines-Thessalon	OTH-072	Gabbronorite	17	299542	5129180	-83.60230	46.26430
01-CAM-169A	Nipissing Diabase-Bruce Mines-Thessalon	OTH-072	Gabbronorite	17	296219	5132901	-83.64700	46.32103
01-CAM-170A	Nipissing Diabase-Bruce Mines-Thessalon	OTH-072	Gabbro or gabbronorite	17	294958	5132724	-83.66328	46.31906
01-CAM-170B	Nipissing Diabase-Bruce Mines-Thessalon	OTH-072	Gabbronorite	17	294958	5132724	-83.66328	46.31906
01-CAM-171A	Nipissing Diabase-Rose Township	OTH-073	Gabbro	17	289846	5131631	-83.72912	46.30767
01-CAM-172A	Nipissing Diabase-Rose Township	OTH-073	Monzodiorite to diorite	17	284977	5129658	-83.79138	46.28840
01-CAM-173A	Nipissing Diabase-Rose Township	OTH-073	Gabbro	17	285236	5131675	-83.78894	46.30662
01-CAM-174A	Nipissing Diabase-Rose Township	OTH-073	Quartz-gabbro	17	291350	5145105	-83.71561	46.42926
01-CAM-175A	Nipissing Diabase-Rose Township	OTH-073	Gabbronorite	17	292100	5144783	-83.70572	46.42659
01-CAM-176A	Nipissing Diabase-Rose Township	OTH-073	Gabbro	17	290220	5147734	-83.73148	46.45254
01-CAM-177A	Nipissing Diabase-Rose Township	OTH-073	Gabbro	17	302975	5137204	-83.56113	46.36171
01-CAM-178A	Nipissing Diabase-Rose Township	OTH-073	Gabbro	17	299956	5142907	-83.60277	46.41210
01-CAM-179A	Nipissing Diabase-Rose Township	OTH-073	Gabbronorite	17	299103	5140326	-83.61275	46.38864
01-CAM-181A	Nipissing Diabase-Basswood Lake area	OTH-073	Hornblende-gabbro	17	309005	5135631	-83.48218	46.34930
01-CAM-182A	Nipissing Diabase-Basswood Lake area	OTH-073	Hornblende-gabbro	17	322737	5131015	-83.30212	46.31152
01-CAM-183A	Nipissing Diabase-Basswood Lake area	OTH-073	Gabbronorite/orthopyroxene-gabbro	17	322300	5131831	-83.30810	46.31875
01-CAM-184A	Nipissing Diabase-Basswood Lake area	OTH-073	Quartz-gabbro	17	321266	5132934	-83.32193	46.32839
01-CAM-185A	Nipissing Diabase-Basswood Lake area	OTH-073	Hornblende-gabbro	17	318586	5134334	-83.35726	46.34027
01-CAM-186A	Nipissing Diabase-Basswood Lake area	OTH-073	Quartz-gabbro to gabbronorite	17	310149	5134609	-83.46691	46.34043
01-CAM-187A	Nipissing Diabase-Basswood Lake area	OTH-073	Quartz-gabbro to gabbronorite	17	310512	5135741	-83.46265	46.35071
01-CAM-188A	Nipissing Diabase-Basswood Lake area	OTH-073	Quartz-monzonite	17	313151	5135741	-83.42839	46.35144
01-CAM-189A	Nipissing Diabase-Basswood Lake area	OTH-073	Monzodiorite to monzogabbro	17	311365	5136760	-83.45199	46.36011
01-CAM-180A	Otter Township	OTH-074	Monzonite	17	307865	5162805	-83.50818	46.59330
01-RAS-253A	Sun Rise Lake Area	OTH-075	Mesogabbro	16	676058	5324196	-84.63753	48.04876
01-RAS-254A	Sun Rise Lake Area	OTH-075	Metabasalt or mesogabbro	16	676044	5324175	-84.63780	48.06833
01-RAS-255A	Sun Rise Lake Area	OTH-075	Massive pyrite	16	676046	5324166	-84.63770	48.04849

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-RAS-256A	Sun Rise Lake Area	OTH-075	Leucogabbro	16	676022	5324153	-84.63803	48.04838
01-RAS-257A	Sun Rise Lake Area	OTH-075	Melagabbro	16	675989	5324098	-84.63849	48.04790
01-RAS-258A	Sun Rise Lake Area	OTH-075	Mesogabbro	16	675986	5324074	-84.63854	48.04768
01-RAS-259A	Sun Rise Lake Area	OTH-075	Mesogabbro	16	675945	5323958	-84.63914	48.04665
01-RAS-260A	Pelletier	OTH-076	Metamesogabbro	17	305751	5448068	-83.66410	49.15675
01-RAS-261A	Pelletier	OTH-076	Metaleucogabbro	17	305249	5448597	-83.67123	49.16135
01-RAS-262A	Pelletier	OTH-076	Metamesogabbro	17	305136	5448602	-83.67278	49.16136
01-RAS-263A	Pelletier	OTH-076	Metagabbro	17	305136	5448602	-83.67278	49.16136
01-RAS-264A	Abitibi Canyon-Pinard intrusion	OTH-077	Mesogabbro	17	461243	5519989	-81.53877	49.83316
01-RAS-265A	Abitibi Canyon-Pinard intrusion	OTH-077	Mesogabbro	17	460769	5519773	-81.54534	49.83118
01-RAS-266A	Abitibi Canyon-Pinard intrusion	OTH-077	Olivine-gabbro	17	460475	5519491	-81.54940	49.82863
01-RAS-267A	Abitibi Canyon-Pinard intrusion	OTH-077	Olivine-gabbro	17	466236	5519420	-81.46930	49.82834
01-RAS-268A	Abitibi Canyon-Pinard intrusion	OTH-077	Olivine-gabbro	17	459181	5525449	-81.56802	49.88213
01-RAS-269A	Abitibi Canyon-Pinard intrusion	OTH-077	Olivine-gabbro	17	459158	5525466	-81.56834	49.88228
01-RAS-270A	Abitibi Canyon-Pinard intrusion	OTH-077	Olivine-gabbro	17	459142	5525492	-81.56856	49.88251
01-MGH-036A	Montcalm	OTH-078	Mesogabbro	17	418872	5391451	-82.10195	48.67281
01-MGH-036C	Montcalm	OTH-078	Norite	17	418872	5391451	-82.10195	48.67281
01-MGH-036D	Montcalm	OTH-078	Mesogabbro	17	418872	5391451	-82.10195	48.67281
01-MGH-037A	Montcalm	OTH-078	Mesogabbro	17	418822	5391476	-82.10263	48.67302
01-MGH-037B	Montcalm	OTH-078	Mesogabbro	17	418822	5391476	-82.10263	48.67302
01-MGH-037C	Montcalm	OTH-078	Mesogabbro	17	418822	5391476	-82.10263	48.67302
01-MGH-037D	Montcalm	OTH-078	Mesogabbro	17	418822	5391476	-82.10263	48.67302
01-MGH-037E	Montcalm	OTH-078	Mesogabbro	17	418822	5391476	-82.10263	48.67302
01-MGH-037F	Montcalm	OTH-078	Mesogabbro	17	418822	5391476	-82.10263	48.67302
01-MGH-038A	Montcalm	OTH-078	Mesogabbro	17	418872	5391376	-82.10194	48.67213
01-MGH-038B	Montcalm	OTH-078	Mesogabbro	17	418872	5391376	-82.10194	48.67213
01-MGH-038C	Montcalm	OTH-078	Mesogabbro	17	418872	5391376	-82.10194	48.67213
01-MGH-038D	Montcalm	OTH-078	Mesogabbro	17	418872	5391376	-82.10194	48.67213
01-MGH-038E	Montcalm	OTH-078	Melamesogabbro	17	418872	5391376	-82.10194	48.67213
01-MGH-039A	Montcalm	OTH-078	Mesogabbro-leucogabbro	17	418871	5391353	-82.10194	48.67192
01-MGH-039B	Montcalm	OTH-078	Melagabbro	17	418871	5391353	-82.10194	48.67192
01-MGH-040A	Montcalm	OTH-078	Leuco to mesogabbro	17	418872	5391402	-82.10194	48.67236
01-MGH-040B	Montcalm	OTH-078	Peridotite	17	418872	5391402	-82.10194	48.67236
01-MGH-040C	Montcalm	OTH-078	Melagabbro	17	418872	5391402	-82.10194	48.67236
01-MGH-040D	Montcalm	OTH-078	Mesogabbro	17	418872	5391402	-82.10194	48.67236
01-MGH-041A	Montcalm	OTH-078	Meso-leucogabbro	17	418873	5391426	-82.10193	48.67236
01-MGH-041B	Montcalm	OTH-078	Mesogabbro-leucogabbro	17	418873	5391426	-82.10193	48.67236
01-MGH-041C	Montcalm	OTH-078	Semi-massive sul	17	418873	5391426	-82.10193	48.67236

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-MGH-041D	Montcalm	OTH-078	Mesogabbro	17	418873	5391426	-82.10193	48.67236
01-MGH-041E	Montcalm	OTH-078	Leucogabbro	17	418873	5391426	-82.10193	48.67236
01-MGH-041F	Montcalm	OTH-078	Mesogabbro	17	418873	5391426	-82.10193	48.67236
01-MGH-042A	Montcalm	OTH-078	Leuco to mesogabbro	17	418872	5391501	-82.10196	48.67325
01-MGH-042B	Montcalm	OTH-078	Melagabbro	17	418872	5391501	-82.10196	48.67325
01-MGH-042C	Montcalm	OTH-078	Mesogabbro	17	418872	5391501	-82.10196	48.67325
01-MGH-042D	Montcalm	OTH-078	Net-textured sul in websterite	17	418872	5391501	-82.10196	48.67325
01-MGH-042E	Montcalm	OTH-078	Leucogabbro	17	418872	5391501	-82.10196	48.67325
01-CMV-147A	Loveland	OTH-079	Cannot be identified	17	454228	5388820	-81.62140	48.65270
01-CMV-147B	Loveland	OTH-079	Quartz-gabbro	17	454228	5388820	-81.62140	48.65270
01-CMV-147C	Loveland	OTH-079	Mesogabbro	17	454228	5388820	-81.62140	48.65270
01-CMV-147D	Loveland	OTH-079	Mesogabbro	17	454228	5388820	-81.62140	48.65270
01-CMV-147E	Loveland	OTH-079	Quartz-gabbro	17	454228	5388820	-81.62140	48.65270
01-CMV-148A	Loveland	OTH-079	Quartz-gabbro	17	454397	5388868	-81.61910	48.65310
01-CMV-148B	Loveland	OTH-079	Mesogabbro	17	454397	5388868	-81.61910	48.65310
01-CMV-148C	Loveland	OTH-079	Quartz-gabbro	17	454397	5388868	-81.61910	48.65310
01-CMV-148D	Loveland	OTH-079	Mesogabbro	17	454397	5388868	-81.61910	48.65310
01-CMV-149A	Loveland	OTH-079	Mesogabbro	17	454274	5388795	-81.62080	48.65250
01-CMV-150A	Loveland	OTH-079	Quartz-gabbro	17	454314	5389120	-81.62030	48.65540
01-CMV-150B	Loveland	OTH-079	Mesogabbro	17	454314	5389120	-81.62030	48.65540
01-CMV-150C	Loveland	OTH-079	Gabbro	17	454314	5389120	-81.62030	48.65540
01-CAM-018B	Kamiskotia	OTH-080	Peridotite-lherzolite	17	446883	5366461	-81.71826	48.45110
01-CAM-019A	Kamiskotia	OTH-080	Gabbro	17	446891	5366442	-81.71815	48.45093
01-CAM-020A	Kamiskotia	OTH-080	Serpentinite	17	446004	5366456	-81.73014	48.45098
01-CAM-021A	Kamiskotia	OTH-080	Chlorite-actinolite schist	17	446066	5366423	-81.72930	48.45069
01-CAM-022A	Kamiskotia	OTH-080	Leucogabbro	17	446004	5366456	-81.73014	48.45098
01-CAM-023A	Kamiskotia	OTH-080	Melagabbro	17	441087	5370683	-81.79723	48.48856
01-CAM-024A	Kamiskotia	OTH-080	Gabbro	17	440462	5371318	-81.80578	48.49421
01-CAM-025A	Kamiskotia	OTH-080	Gabbronorite to orthopyroxene-gabbro	17	440487	5371380	-81.80545	48.49477
01-CAM-026A	Kamiskotia	OTH-080	Gabbro	17	440487	5371380	-81.80545	48.49477
01-CAM-027A	Kamiskotia	OTH-080	Gabbro	17	440487	5371380	-81.80545	48.49477
01-CAM-028A	Kamiskotia	OTH-080	Metamelagabbro	17	440387	5371892	-81.80688	48.49937
01-CAM-029A	Kamiskotia	OTH-080	Metamelagabbro	17	438573	5374193	-81.83177	48.51989
01-CAM-030A	Kamiskotia	OTH-080	Gabbro to gabbronorite	17	437738	5374837	-81.84317	48.52560
01-RAS-023A	Kamiskotia	OTH-080	Mesogabbro	17	449176	5366396	-81.68724	48.45070
01-RAS-024A	Kamiskotia	OTH-080	Metamesogabbro	17	449176	5366315	-81.68723	48.44997
01-RAS-025A	Kamiskotia	OTH-080	Hornblende-gabbro	17	449185	5366310	-81.68711	48.44993
01-RAS-026A	Kamiskotia	OTH-080	Gabbro	17	456207	5376705	-81.59324	48.54397

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-RAS-027A	Kamiskotia	OTH-080	Mesogabbro	17	455286	5377024	-81.60575	48.54677
01-RAS-028A	Kamiskotia	OTH-080	Mesogabbro	17	454776	5377312	-81.61269	48.54933
01-RAS-029A	Kamiskotia	OTH-080	Mesogabbro	17	452675	5378143	-81.64126	48.55665
01-RAS-030A	Kamiskotia	OTH-080	Leucogabbro	17	451218	5377503	-81.66093	48.55078
01-RAS-031A	Kamiskotia	OTH-080	Mesogabbro	17	451274	5377446	-81.66016	48.55027
01-RAS-032A	Kamiskotia	OTH-080	Olivine-gabbro	17	451705	5377477	-81.65432	48.55058
01-RAS-033A	Kamiskotia	OTH-080	Mesogabbro	17	442392	5361957	-81.77837	48.41018
01-RAS-034A	Kamiskotia	OTH-080	Leucogabbro	17	442392	5361957	-81.77837	48.41018
01-RAS-035A	Kamiskotia	OTH-080	Mesogabbro	17	442733	5361895	-81.77375	48.40966
01-RAS-036A	Kamiskotia	OTH-080	Hornblende-gabbro	17	451282	5380954	-81.66046	48.58183
01-CAM-031A	Cunningham	OTH-081	Serpentinite	17	374037	5284702	-82.67894	47.70543
01-CAM-032A	Cunningham	OTH-081	Dunite to lherzolite	17	373971	5284659	-82.67981	47.70503
01-CAM-033A	Cunningham	OTH-081	Serpentinite	17	373939	5284600	-82.68022	47.70450
01-CAM-034A	Cunningham	OTH-081	Gabbro	17	373295	5285306	-82.68901	47.71072
01-CAM-035A	Cunningham	OTH-081	Gabbro to hornblende-gabbro	17	373526	5286093	-82.68616	47.71784
01-CAM-036A	Cunningham	OTH-081	Gabbro	17	373315	5283406	-82.68819	47.69363
01-CAM-037A	Cunningham	OTH-081	Gabbro	17	373179	5283284	-82.68996	47.69251
01-CAM-038A	Cunningham	OTH-081	Serpentinite	17	373096	5283129	-82.69102	47.69110
01-RAS-037A	Cunningham	OTH-081	Quartz-gabbro to quartz diorite	17	376172	5284409	-82.65041	47.70321
01-RAS-038A	Cunningham	OTH-081	Mesogabbro-leucogabbro	17	376221	5284367	-82.64975	47.70284
01-RAS-039A	Cunningham	OTH-081	Mesogabbro	17	376489	5284130	-82.64611	47.70076
01-RAS-040A	Cunningham	OTH-081	Dunite	17	376353	5284105	-82.64792	47.70051
01-RAS-041A	Cunningham	OTH-081	Melagabbro	17	376485	528415[illegible]	-82.64617	47.70100
01-RAS-042A	Cunningham	OTH-081	Mesogabbro	17	376681	5284136	-82.64356	47.70085
01-RAS-043A	Cunningham	OTH-081	Melamesogabbro	17	376697	5284122	-82.64334	47.70073
01-RAS-044A	Cunningham	OTH-081	Mesogabbro	17	376764	5284132	-82.64245	47.70083
01-RAS-045A	Cunningham	OTH-081	Wehrlite-orthocumulate	17	377271	5283876	-82.63562	47.69863
01-RAS-046A	Cunningham	OTH-081	Quartz-gabbro	17	378215	5283411	-82.62292	47.69462
01-RAS-047A	Cunningham	OTH-081	Wehrlite-orthocumulate	17	378288	5283409	-82.62194	47.69462
01-RAS-048A	Cunningham	OTH-081	Leucogabbro	17	378410	5283666	-82.62039	47.69695
01-RAS-049A	Cunningham	OTH-081	Leucogabbro	17	376305	5283495	-82.64838	47.69501
01-RAS-050A	Garnett	OTH-081	Mesogabbro	17	387489	5286408	-82.50014	47.72326
01-RAS-051A	Garnett	OTH-081	Mesogabbro	17	387860	5286161	-82.49513	47.72110
01-RAS-052A	Garnett	OTH-081	Coarse-grained basalt	17	387860	5286161	-82.49513	47.72110
01-CMV-048A	Sothman	OTH-082	Dunite	17	481714	5299238	-81.24431	47.84827
01-CMV-048B	Sothman	OTH-082	Dunite	17	481714	5299238	-81.24431	47.84827
01-CMV-048C	Sothman	OTH-082	Lherzolite	17	481714	5299238	-81.24431	47.84827
01-CMV-048D	Sothman	OTH-082	Lherzolite	17	481714	5299238	-81.24431	47.84827

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-CMV-048E	Sothman	OTH-082	Porphyry dike	17	481714	5299238	-81.24431	47.84827
01-CMV-048F	Sothman	OTH-082	Andesite	17	481714	5299238	-81.24431	47.84827
01-MGH-006A	Peterlong Lake	OTH-083	Gabbro to quartz-gabbro	17	477105	5324560	-81.30728	48.07595
01-MGH-007A	Peterlong Lake	OTH-083	Quartz-gabbro	17	476964	5324429	-81.30916	48.07477
01-MGH-008A	Peterlong Lake	OTH-083	Quartz-gabbro	17	476449	5324620	-81.31609	48.07647
01-MGH-009A	Peterlong Lake	OTH-083	Quartz-gabbro	17	476601	5325263	-81.31408	48.08226
01-MGH-010A	Peterlong Lake	OTH-083	Quartz-gabbro	17	476610	5325750	-81.31399	48.08664
01-MGH-011A	Peterlong Lake	OTH-083	Mesogabbro	17	477490	5328379	-81.30231	48.11033
01-MGH-012A	Peterlong Lake	OTH-083	Quartz-gabbro	17	477355	5328394	-81.30412	48.11046
01-MGH-013A	Peterlong Lake	OTH-083	Mesogabbro	17	477277	5328405	-81.30517	48.11055
01-MGH-014A	Peterlong Lake	OTH-083	Leucogabbro	17	476961	5328493	-81.30942	48.11133
01-MGH-015A	Peterlong Lake	OTH-083	Lherzolite-websterite	17	476888	5328483	-81.31040	48.11124
01-MGH-016A	Peterlong Lake	OTH-083	Mesogabbro	17	476746	5328544	-81.31231	48.11178
01-MGH-017A	Peterlong Lake	OTH-083	Mesogabbro	17	476763	5328534	-81.31208	48.11169
01-MGH-018A	Peterlong Lake	OTH-083	Mesogabbro	17	476767	5328534	-81.31203	48.11169
01-MGH-019A	Peterlong Lake	OTH-083	Quartz-gabbro	17	477552	5327585	-81.30143	48.10318
01-MGH-029A	Dundonald	OTH-084	Mesogabbro-leucogabbro	17	511490	5386492	-80.84395	48.63344
01-MGH-030A	Dundonald	OTH-084	Leuco to mesogabbro	17	511510	5386528	-80.84367	48.63377
01-MGH-031A	Dundonald	OTH-084	Dunite	17	511492	5386616	-80.84392	48.63456
01-MGH-032A	Dundonald	OTH-084	Clinopyroxenite	17	511475	5386657	-80.84415	48.63493
01-MGH-033A	Dundonald	OTH-084	Melanogabbro	17	511487	5386721	-80.84398	48.63551
01-MGH-033B	Dundonald	OTH-084	Clinopyroxenite	17	511457	5386730	-80.84439	48.63559
01-MGH-033C	Dundonald	OTH-084	Mesogabbro	17	511409	5386776	-80.84504	48.63600
01-MGH-034A	Dundonald	OTH-084	Clinopyroxenite-melagabbro	17	513667	5386900	-80.81439	48.63707
01-MGH-034B	Dundonald	OTH-084	Clinopyroxenite	17	513625	5386376	-80.81497	48.63236
01-MGH-034C	Dundonald	OTH-084	Clinopyroxenite	17	513651	5386392	-80.81462	48.63250
01-MGH-034D	Dundonald	OTH-084	Clinopyroxenite-melagabbro	17	513614	5386381	-80.81512	48.63240
01-MGH-034E	Dundonald	OTH-084	Clinopyroxenite	17	513526	5386332	-80.81632	48.63196
01-MGH-035A	Dundonald	OTH-084	Mesogabbro	17	512770	5387006	-80.82656	48.63804
01-MGH-035B	Dundonald	OTH-084	Peridotite	17	512780	5387006	-80.82642	48.63804
01-MGH-035C	Dundonald	OTH-084	Clinopyroxenite	17	512784	5387017	-80.82637	48.63814
01-MGH-035D	Dundonald	OTH-084	Clinopyroxenite	17	512766	5387017	-80.82661	48.63814
01-MGH-035E	Dundonald	OTH-084	Dunite	17	512700	5387005	-80.82751	48.63804
01-MGH-043A	Dundonald	OTH-084	Wehrlite	17	513288	5386914	-80.81953	48.63721
01-MGH-043B	Dundonald	OTH-084	Clinopyroxenite	17	513288	5386914	-80.81953	48.63721
01-MGH-043C	Dundonald	OTH-084	Wehrlite	17	513288	5386914	-80.81953	48.63721
01-MGH-043D	Dundonald	OTH-084	Clinopyroxenite	17	513288	5386914	-80.81953	48.63721
01-MGH-043E	Dundonald	OTH-084	Wehrlite	17	513288	5386914	-80.81953	48.63721

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-MGH-043F	Dundonald	OTH-084	Clinopyroxenite	17	513288	5386914	-80.81953	48.63721
01-MGH-043G	Dundonald	OTH-084	Wehrlite	17	513288	5386914	-80.81953	48.63721
01-MGH-043H	Dundonald	OTH-084	Clinopyroxenite	17	513288	5386914	-80.81953	48.63721
01-MGH-043I	Dundonald	OTH-084	Wehrlite	17	513288	5386914	-80.81953	48.63721
01-MGH-044A	Dundonald	OTH-084	Clinopyroxenite	17	513255	5386840	-80.81998	48.63654
01-MGH-044B	Dundonald	OTH-084	Anorthosite	17	513255	5386840	-80.81998	48.63654
01-MGH-044C	Dundonald	OTH-084	Clinopyroxenite	17	513255	5386840	-80.81998	48.63654
01-MGH-045A	Dundonald	OTH-084	Clinopyroxenite	17	513276	5386881	-80.81969	48.63691
01-MGH-045B	Dundonald	OTH-084	Clinopyroxenite	17	513276	5386881	-80.81969	48.63691
01-MGH-045C	Dundonald	OTH-084	Clinopyroxenite	17	513276	5386881	-80.81969	48.63691
01-CAM-001A	Mann Intrusion	OTH-085	Wehrlite or lherzolite	17	494680	5412029	-81.07243	48.86326
01-CAM-002A	Mann Intrusion	OTH-085	Wehrlite	17	494680	5412029	-81.07243	48.86326
01-CAM-003A	Mann Intrusion	OTH-085	Websterite	17	494680	5412029	-81.07243	48.86326
01-CAM-004A	Mann Intrusion	OTH-085	Clinopyroxenite	17	494671	5412069	-81.07255	48.86362
01-CAM-005A	Mann Intrusion	OTH-085	Peridotite to lherzolite	17	494658	5412090	-81.07273	48.86381
01-CAM-006A	Mann Intrusion	OTH-085	Peridotite to lherzolite	17	494806	5411885	-81.07071	48.86197
01-CAM-006B	Mann Intrusion	OTH-085	Peridotite to wehrlite	17	494749	5412215	-81.07149	48.86494
01-CAM-007A	Mann Intrusion	OTH-085	Peridotite to wehrlite	17	494806	5411885	-81.07071	48.86197
01-CAM-008A	Mann Intrusion	OTH-085	Wehrlite	17	494806	5411885	-81.07071	48.86197
01-CAM-009A	Mann Intrusion	OTH-085	Wehrlite	17	494806	5411885	-81.07071	48.86197
01-CAM-010A	Mann Intrusion	OTH-085	Gabbro	17	494806	5411885	-81.07071	48.86197
01-CAM-011A	Mann Intrusion	OTH-085	Gabbro	17	494806	5411885	-81.07071	48.86197
01-CAM-012A	Mann Intrusion	OTH-085	Quartz-gabbro	17	494806	5411885	-81.07071	48.86197
01-CAM-013A	Mann Intrusion	OTH-085	Metagabbro to metadiorite	17	494806	5411885	-81.07071	48.86197
01-CAM-014A	Mann Intrusion	OTH-085	Gabbro?	17	494806	5411885	-81.07071	48.86197
01-CAM-015A	Mann Intrusion	OTH-085	Metagabbro to metaquartz-gabbro	17	494806	5411885	-81.07071	48.86197
01-CAM-016A	Mann Intrusion	OTH-085	Gabbronorite to orthopyroxene-gabbro	17	494806	5411885	-81.07071	48.86197
01-CAM-017A	Mann Intrusion	OTH-085	Gabbro or mesogabbro	17	494806	5411885	-81.07071	48.86197
01-CAM-018A	Mann Intrusion	OTH-085	Peridotite or pyroxenite	17	494806	5411885	-81.07071	48.86197
01-MGH-001A	Mann Intrusion	OTH-085	Lherzolite	17	496583	5409453	-81.04646	48.84010
01-MGH-001B	Mann Intrusion	OTH-085	Mesogabbro-leucogabbro	17	496583	5409453	-81.04646	48.84010
01-MGH-002A	Mann Intrusion	OTH-085	Lherzolite	17	496583	5409450	-81.04646	48.84008
01-MGH-002B	Mann Intrusion	OTH-085	Mesogabbro	17	496583	5409450	-81.04646	48.84008
01-MGH-002C	Mann Intrusion	OTH-085	Peridotite	17	496583	5409450	-81.04646	48.84008
01-MGH-003A	Mann Intrusion	OTH-085	Lherzholite-wehrlite	17	498610	5410456	-81.01884	48.84913
01-MGH-003B	Mann Intrusion	OTH-085	Mesogabbro	17	498610	5410456	-81.01884	48.84913
01-MGH-003C	Mann Intrusion	OTH-085	Lherzolite-harburgite	17	498610	5410456	-81.01884	48.84913
01-MGH-003D	Mann Intrusion	OTH-085	Lherzolite	17	498610	5410456	-81.01884	48.84913

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-MGH-003E	Mann Intrusion	OTH-085	Gabbro-lherzolite (harzburgite)	17	498610	5410456	-81.01884	48.84913
01-MGH-004A	Mann Intrusion	OTH-085	Dunite	17	498108	5409880	-81.02568	48.84395
01-MGH-004B	Mann Intrusion	OTH-085	Dunite	17	498108	5409880	-81.02568	48.84395
01-MGH-004D	Mann Intrusion	OTH-085	Dunite-lherzolite	17	498108	5409880	-81.02568	48.84395
01-MGH-004E	Mann Intrusion	OTH-085	Lherzolite	17	498108	5409880	-81.02568	48.84395
01-MGH-005A	Mann Intrusion	OTH-085	Lherzolite	17	496256	5412125	-81.05094	48.86414
01-MGH-005B	Mann Intrusion	OTH-085	Peridotite	17	496256	5412125	-81.05094	48.86414
01-MGH-005C	Mann Intrusion	OTH-085	Dunite	17	496256	5412125	-81.05094	48.86414
01-RAS-001A	Mann Intrusion	OTH-085	Mesogabbro-leucogabbro	17	494833	5411615	-81.07033	48.85954
01-RAS-002A	Mann Intrusion	OTH-085	Peridotite	17	494593	5411207	-81.07360	48.85587
01-RAS-003A	Mann Intrusion	OTH-085	Peridotite	17	494675	5411987	-81.07249	48.86289
01-RAS-004A	Mann Intrusion	OTH-085	Dunite	17	494675	5411987	-81.07249	48.86289
01-RAS-005A	Mann Intrusion	OTH-085	Dunite	17	494675	5411987	-81.07249	48.86289
01-RAS-006A	Mann Intrusion	OTH-085	Dunite	17	494675	5411987	-81.07249	48.86289
01-RAS-007A	Garrison Intrusion	OTH-086	Dunite	17	575763	5375667	-79.97364	48.53159
01-RAS-008A	Garrison Intrusion	OTH-086	Dunite	17	575763	5375687	-79.97364	48.53177
01-RAS-009A	Garrison Intrusion	OTH-086	Dunite	17	576254	5375836	-79.96696	48.53305
01-RAS-010A	Garrison Intrusion	OTH-086	Lherzolite	17	576254	5375841	-79.96696	48.53310
01-RAS-011A	Garrison Intrusion	OTH-086	Clinopyroxenite	17	576254	5375846	-79.96696	48.53314
01-RAS-012A	Garrison Intrusion	OTH-086	Mesogabbro	17	576254	5375851	-79.96696	48.53319
01-RAS-013A	Garrison Intrusion	OTH-086	Mesogabbro	17	576254	5375861	-79.96696	48.53328
01-RAS-014A	Garrison Intrusion	OTH-086	Mesogabbro	17	576254	5375871	-79.96696	48.53337
01-RAS-015A	Garrison Intrusion	OTH-086	Hornblende-gabbro	17	576254	5375878	-79.96695	48.53343
01-RAS-016A	Garrison Intrusion	OTH-086	Mesogabbro	17	575468	5375844	-79.97761	48.53322
01-RAS-017A	Garrison Intrusion	OTH-086	Mesogabbro	17	575468	5375834	-79.97761	48.53313
01-RAS-018A	Garrison Intrusion	OTH-086	Metagabbro	17	575468	5375814	-79.97761	48.53295
01-RAS-019A	Garrison Intrusion	OTH-086	Wehrlite	17	576774	5375872	-79.95991	48.53331
01-RAS-020A	Garrison Intrusion	OTH-086	Pegmatoidal metagabbro	17	576774	5375882	-79.95991	48.53340
01-RAS-021A	Garrison Intrusion	OTH-086	Mesogabbro	17	576774	5375890	-79.95991	48.53348
01-RAS-111A	Centre Hill Complex	OTH-087	Clinopyroxenite	17	558737	5382309	-80.20330	48.59316
01-RAS-112A	Centre Hill Complex	OTH-087	Dunite	17	558703	5382365	-80.20376	48.59367
01-RAS-113A	Centre Hill Complex	OTH-087	Dunite	17	558693	5382387	-80.20389	48.59387
01-RAS-114A	Centre Hill Complex	OTH-087	Clinopyroxenite	17	558697	5382394	-80.20384	48.59393
01-RAS-115A	Centre Hill Complex	OTH-087	Dunite	17	558687	5382408	-80.20397	48.59406
01-RAS-116A	Centre Hill Complex	OTH-087	Clinopyroxenite	17	558692	5382412	-80.20390	48.59410
01-RAS-117A	Centre Hill Complex	OTH-087	Clinopyroxenite	17	558684	5382446	-80.20400	48.59440
01-RAS-118A	Centre Hill Complex	OTH-087	Clinopyroxenite	17	558709	5382460	-80.20366	48.59453
01-RAS-119A	Centre Hill Complex	OTH-087	Clinopyroxenite	17	558709	5382462	-80.20366	48.59454

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-RAS-119B	Centre Hill Complex	OTH-087	Leucogabbro	17	558709	5382462	-80.20366	48.59454
01-RAS-119C	Centre Hill Complex	OTH-087	Melagabbro	17	558709	5382462	-80.20366	48.59454
01-RAS-120A	Centre Hill Complex	OTH-087	Mesogabbro-clinopyroxenite	17	558709	5382463	-80.20366	48.59455
01-RAS-121A	Centre Hill Complex	OTH-087	Clinopyroxenite	17	558695	5382526	-80.20384	48.59512
01-RAS-122A	Centre Hill Complex	OTH-087	Metagabbro	17	558686	5382512	-80.20397	48.59500
01-RAS-123A	Centre Hill Complex	OTH-087	Clinopyroxenite	17	558680	5382537	-80.20405	48.59522
01-RAS-124A	Centre Hill Complex	OTH-087	Melagabbro	17	558678	5382597	-80.20406	48.59576
01-RAS-125A	Centre Hill Complex	OTH-087	Leucogabbro	17	558729	5382648	-80.20337	48.59621
01-RAS-126A	Centre Hill Complex	OTH-087	Mesogabbro	17	558728	5382717	-80.20337	48.59684
01-RAS-127A	Centre Hill Complex	OTH-087	Leucogabbro	17	558742	5382801	-80.20317	48.59759
01-RAS-128A	Centre Hill Complex	OTH-087	Mesogabbro	17	558712	5382840	-80.20357	48.59794
01-RAS-129A	Centre Hill Complex	OTH-087	Basalt dike or chilled margin	17	558890	5382679	-80.20118	48.59648
01-RAS-130A	Centre Hill Complex	OTH-087	Hyaloclastite	17	558905	5382686	-80.20097	48.59654
01-MGH-020A	Munro	OTH-088	Dunite	17	555200	5378559	-80.25177	48.55975
01-MGH-021A	Munro	OTH-088	Dunite	17	555199	5378616	-80.25177	48.56027
01-MGH-022A	Munro	OTH-088	Metamesogabbro	17	555213	5378736	-80.25157	48.56134
01-MGH-022B	Munro	OTH-088	Mesogabbro	17	555213	5378736	-80.25157	48.56134
01-MGH-023A	Munro	OTH-088	Dunite	17	555192	5378711	-80.25186	48.56112
01-MGH-024A	Munro	OTH-088	Mesogabbro	17	555116	5378814	-80.25287	48.56205
01-MGH-025A	Munro	OTH-088	Mesogabbro	17	556336	5377894	-80.23646	48.55367
01-MGH-026A	Munro	OTH-088	lherzolite-dunite	17	556291	5377879	-80.23707	48.55354
01-MGH-027A	Munro	OTH-088	Lherzolite-dunite	17	556216	5377943	-80.23808	48.55412
01-MGH-027B	Munro	OTH-088	Lherzolite-dunite	17	556227	5377961	-80.23793	48.55428
01-MGH-027C	Munro	OTH-088	Lherzolite	17	556229	5377981	-80.23790	48.55446
01-MGH-027D	Munro	OTH-088	Melagabbro-clinopyroxenite	17	556236	5377993	-80.23780	48.55457
01-MGH-027E	Munro	OTH-088	Clinopyroxenite-melagabbro	17	556240	5378007	-80.23775	48.55469
01-MGH-027F	Munro	OTH-088	Melagabbro	17	556237	5378035	-80.23778	48.55495
01-MGH-028A	Munro	OTH-088	Mesogabbro	17	555100	5379200	-80.25304	48.56553
01-MGH-046A	Munro	OTH-088	Dunite-lherzolite	17	556240	5378148	-80.23773	48.55596
01-MGH-046B	Munro	OTH-088	Melagabbro	17	556251	5378150	-80.23758	48.55598
01-MGH-046C	Munro	OTH-088	Mesogabbro	17	556251	5378150	-80.23758	48.55598
01-MGH-046D	Munro	OTH-088	Mesogabbro	17	556274	5378175	-80.23726	48.55620
01-MGH-046E	Munro	OTH-088	Mesogabbro	17	556293	5378196	-80.23700	48.55639
01-ERD-108A	Lake Abitibi	OTH-089	Metagabbronorite to meta-olivine-gabbro	17	587983	5403151	-79.80231	48.77720
01-ERD-109A	Lake Abitibi	OTH-089	Metagabbro	17	583972	5401720	-79.85718	48.76488
01-ERD-110A	Lake Abitibi	OTH-089	Meta-olivine-gabbronorite	17	585411	5402357	-79.83747	48.77042
01-RAS-131A	Ghost Range Complex	OTH-090	Wehrlite	17	585471	5376312	-79.84204	48.53615
01-RAS-132A	Ghost Range Complex	OTH-090	Clinopyroxenite	17	585480	5376360	-79.84190	48.53658

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-RAS-133A	Ghost Range Complex	OTH-090	Mesogabbro	17	585482	5376370	-79.84187	48.53667
01-RAS-134A	Ghost Range Complex	OTH-090	Melagabbro	17	585559	5376399	-79.84083	48.53692
01-RAS-135A	Ghost Range Complex	OTH-090	Mesogabbro	17	585615	5376398	-79.84007	48.53690
01-RAS-136A	Ghost Range Complex	OTH-090	Mesogabbro	17	586815	5376614	-79.82377	48.53868
01-RAS-137A	Ghost Range Complex	OTH-090	Mesogabbro	17	586815	5376616	-79.82377	48.53870
01-RAS-138A	Ghost Range Complex	OTH-090	Mesogabbro	17	588086	5376690	-79.80654	48.53919
01-RAS-139A	Ghost Range Complex	OTH-090	Mesogabbro	17	588053	5376998	-79.80692	48.54196
01-RAS-140A	Ghost Range Complex	OTH-090	Mesogabbro	17	587886	5377753	-79.80902	48.54878
01-MGH-047A	Nordica-Watabeag Lake	OTH-091	Melagabbro	17	529525	5344184	-80.60215	48.25224
01-MGH-047B	Nordica-Watabeag Lake	OTH-091	Chromitite	17	529525	5344184	-80.60215	48.25224
01-MGH-048A	Nordica-Watabeag Lake	OTH-091	Mesogabbro	17	529510	5344211	-80.60235	48.25248
01-MGH-048B	Nordica-Watabeag Lake	OTH-091	Pyroxenite	17	529508	5344211	-80.60237	48.25248
01-MGH-048C	Nordica-Watabeag Lake	OTH-091	Mesogabbro	17	529519	5344212	-80.60223	48.25249
01-MGH-049A	Nordica-Watabeag Lake	OTH-091	Peridotite?	17	529490	5344251	-80.60261	48.25284
01-MGH-049B	Nordica-Watabeag Lake	OTH-091	Peridotite?	17	529488	5344257	-80.60264	48.25290
01-MGH-049C	Nordica-Watabeag Lake	OTH-091	Mesogabbro	17	529492	5344259	-80.60259	48.25292
01-MGH-049D	Nordica-Watabeag Lake	OTH-091	Metagabbro	17	529498	5344266	-80.60251	48.25298
01-MGH-049E	Nordica-Watabeag Lake	OTH-091	Mesogabbro	17	529510	5344270	-80.60234	48.25301
01-CAM-196A	Tisdale Peridotite Sill	OTH-092	Peridotite	17	562691	5324393	-80.15830	48.07178
01-CAM-190A	Otto Stock	OTH-093	Pyroxenite	17	573136	5324571	-80.01808	48.07227
01-CAM-191A	Otto Stock	OTH-093	Alkali fp-syenite to qz-alkali fp-syenite	17	572023	5324437	-80.03304	48.07119
01-CAM-192A	Otto Stock	OTH-093	Syenite	17	572822	5322871	-80.02258	48.05702
01-CAM-192B	Otto Stock	OTH-093	Granite to syenite	17	572822	5322871	-80.02258	48.05702
01-CAM-193A	Otto Stock	OTH-093	Pyroxenite	17	565384	5321176	-80.12265	48.04257
01-CAM-194A	Otto Stock	OTH-093	Pyroxene-hornblende-gabbro	17	566358	5319958	-80.10977	48.03151
01-CAM-195A	Otto Stock	OTH-093	Pyroxenite	17	563385	5323587	-80.14911	48.06446
01-CAM-197A	Otto Stock	OTH-093	Quartz-alkali feldspar-syenite to quartz-syenite	17	565282	5321249	-80.12401	48.04324
01-CAM-198A	Otto Stock	OTH-093	Alkali feldspar-syenite	17	572682	5324360	-80.02420	48.07043
01-CAM-199A	Otto Stock	OTH-093	Lamprophyre dike	17	572039	5324417	-80.03283	48.07101
01-RAS-297A	James Lake Dike	OTH-094	Melamesogabbro	17	595260	5223230	-79.74318	47.15771
01-RAS-298A	James Lake Dike	OTH-094	Melamesogabbro	17	595285	5223280	-79.74284	47.15815
01-RAS-299A	James Lake Dike	OTH-094	Melagabbro	17	595285	5223280	-79.74284	47.15815
01-RAS-300A	James Lake Dike	OTH-094	Massive sulphides	17	595285	5223280	-79.74284	47.15815
01-RAS-291A	James Lake Gabbro	OTH-095	Mesogabbro	17	596001	5223860	-79.73327	47.16327
01-RAS-292A	James Lake Gabbro	OTH-095	Mesogabbro-melagabbro	17	596030	5223839	-79.73289	47.16307
01-RAS-293A	James Lake Gabbro	OTH-095	Pyroxenite now hornblendite	17	595959	5223807	-79.73383	47.16280
01-RAS-294A	James Lake Gabbro	OTH-095	Footwall basalt with trace sul	17	595950	5223807	-79.73395	47.16290
01-RAS-295A	James Lake Gabbro	OTH-095	Pyroxenite	17	596013	5223872	-79.73311	47.16337

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-RAS-296A	James Lake Gabbro	OTH-095	Mesogabbro	17	596013	5223872	-79.73311	47.16337
01-ERD-097A	Copperfields-Milestone Lake	OTH-096	Meta-anorthosite to metaleucogabbro	17	589302	5210755	-79.82423	47.04631
01-ERD-097B	Copperfields-Milestone Lake	OTH-096	Felsic metavolcanic-qz-feldspar crystal tuff	17	589302	5210755	-79.82423	47.04631
01-ERD-098A	Copperfields-Milestone Lake	OTH-096	Felsic metavolcanic-quartz crystal tuff	17	589461	5210788	-79.82213	47.04658
01-ERD-099A	Copperfields-Milestone Lake	OTH-096	Intermediate metavolcanic lithic crystal tuff	17	582292	5207746	-79.91705	47.02015
01-ERD-100A	Copperfields-Milestone Lake	OTH-096	Mafic to intermediate metavolcanic tuff	17	582208	5207676	-79.91817	47.01953
01-ERD-101A	Copperfields-Milestone Lake	OTH-096	Mafic-intermediate metavolcanic crystal lithic tuff	17	581871	5207400	-79.92265	47.01709
01-ERD-102A	Copperfields-Milestone Lake	OTH-096	Felsic to intermediate volcanic crystal tuff	17	581426	5206788	-79.92861	47.01163
01-ERD-103A	Copperfields-Milestone Lake	OTH-096	Intermediate metavolcanic crystal tuff	17	581371	5206870	-79.92932	47.01238
01-ERD-104A	Copperfields-Milestone Lake	OTH-096	Granite to syenite	17	577397	5203383	-79.98219	46.98148
01-ERD-105A	Copperfields-Milestone Lake	OTH-096	Metagabbro	17	577243	5203217	-79.98425	46.98001
01-ERD-106A	Copperfields-Milestone Lake	OTH-096	Metasedimentary or metavolcanic rock	17	577148	5203207	-79.98550	46.97993
01-ERD-107A	Copperfields-Milestone Lake	OTH-096	Mafic metavolcanic	17	576052	5202648	-80.00000	46.97502
01-RAS-301A	Copperfields-Milestone Lake	OTH-096	Quartz-gabbro	17	589462	5210625	-79.82215	47.04512
01-RAS-302A	Copperfields-Milestone Lake	OTH-096	Leucogabbro?	17	589441	5210706	-79.82241	47.04585
01-RAS-303A	Copperfields-Milestone Lake	OTH-096	Mesogabbro	17	589456	5210602	-79.82224	47.04491
01-RAS-304A	Copperfields-Milestone Lake	OTH-096	Quartz-mesogabbro	17	589456	5210602	-79.82224	47.04491
01-RAS-305A	Copperfields-Milestone Lake	OTH-096	Mesogabbro	17	589456	5210602	-79.82224	47.04491
01-RAS-306A	Copperfields-Milestone Lake	OTH-096	Quartz-mesogabbro	17	589456	5210602	-79.82224	47.04491
01-RAS-307A	Copperfields-Milestone Lake	OTH-096	Quartz-mesogabbro	17	589456	5210602	-79.82224	47.04491
01-RAS-308A	Copperfields-Milestone Lake	OTH-096	Mesogabbro-leucogabbro	17	589456	5210602	-79.82224	47.04491
01-RAS-309A	Copperfields-Milestone Lake	OTH-096	Semi-massive sul in leucogabbro to quartz-gabbro	17	589456	5210602	-79.82224	47.04491
01-RAS-310A	Copperfields-Milestone Lake	OTH-096	Semi-massive sul in leucogabbro?	17	589456	5210602	-79.82224	47.04491
01-RAS-311A	Copperfields-Milestone Lake	OTH-096	Quartz-gabbro to diorite	17	588671	5210199	-79.83265	47.04139
01-RAS-312A	Copperfields-Milestone Lake	OTH-096	Mesogabbro to quartz-gabbro	17	588671	5210199	-79.83265	47.04139
01-RAS-313A	Copperfields-Milestone Lake	OTH-096	Mesogabbro?	17	588671	5210199	-79.83265	47.04139
01-RAS-314A	Copperfields-Milestone Lake	OTH-096	Semi-massive sul in quartz-gabbro?	17	588671	5210199	-79.83265	47.04139
01-RAS-315A	Copperfields-Milestone Lake	OTH-096	Quartz-gabbro	17	588671	5210199	-79.83265	47.04139
01-CMV-038A	Caribou Lake	OTH-097	Olivine-gabbronorite	17	573700	5086042	-80.04933	45.92600
01-CMV-039A	Caribou Lake	OTH-097	Olivine-gabbronorite	17	573746	5085949	-80.04875	45.92516
01-CMV-040A	Caribou Lake	OTH-097	Metagabbro	17	573797	5086190	-80.04806	45.92732
01-CMV-041A	Caribou Lake	OTH-097	Metagabbro	17	573874	5086124	-80.04707	45.92672
01-CMV-042A	Caribou Lake	OTH-097	Norite	17	573024	5086221	-80.05802	45.92768
01-CMV-043A	Caribou Lake	OTH-097	Gabbronorite	17	569857	5086225	-80.09886	45.92805
01-CMV-044A	Caribou Lake	OTH-097	Gabbronorite	17	569268	5086557	-80.10615	45.93109
01-CMV-045A	Caribou Lake	OTH-097	Gabbronorite	17	570053	5087180	-80.09620	45.93662
01-CMV-046A	Caribou Lake	OTH-097	Gabbronorite	17	569916	5087466	-80.09792	45.93921
01-CMV-047A	Caribou Lake	OTH-097	Pegmatitic metagabbro	17	569264	5087370	-80.10634	45.93841

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-ERD-111A	Caribou Lake	OHH-097	Gabbronorite	17	572010	5086279	-80.07109	45.92631
01-ERD-112A	Caribou Lake	OHH-097	Monzogranite	17	571086	5088164	-80.08272	45.94555
01-ERD-114A	Caribou Lake	OHH-097	Gabbronorite	17	571020	5087577	-80.08366	45.94010
01-ERD-114B	Caribou Lake	OHH-097	Metagabbronorite	17	571020	5087577	-80.08366	45.94010
01-ERD-115A	Caribou Lake	OHH-097	Gabbronorite	17	570641	5087620	-80.08597	45.94050
01-ERD-116A	Caribou Lake	OHH-097	Pegmatitic norite	17	570797	5087636	-80.08653	45.94065
01-ERD-117A	Caribou Lake	OHH-097	Olivine norite	17	569706	5088242	-80.10052	45.94621
01-ERD-118A	Caribou Lake	OHH-097	Olivine-gabbronorite	17	569465	5087674	-80.10368	45.94293
01-ERD-119A	Caribou Lake	OHH-097	Metagabbro	17	568563	5087698	-80.11531	45.94323
01-ERD-120A	Caribou Lake	OHH-097	Metasediment?	17	567561	5087630	-80.12625	45.94272
01-ERD-096A	Papineau	OHH-098	Metagabbro	17	677536	5122205	-78.69739	46.23225
95-RME-0160	McClintock	OHH-099	Norite	17	670950	5026700	-78.81670	45.37490
95-RME-0161	McClintock	OHH-099	Ore	17	670950	5026700	-78.81670	45.37490
95-RME-0162	McClintock	OHH-099	Ore host rock	17	670950	5026700	-78.81670	45.37490
95-RME-0163	McClintock	OHH-099	Norite	17	657660	5016935	-78.98880	45.30630
01-ERD-051A	Little Papineau Lake	OHH-100	Tonalite	18	267037	5015080	-77.98494	45.21963
01-ERD-060A	Little Papineau Lake	OHH-100	Tonalite	18	268015	5015009	-83.95645	45.26023
01-CMV-014A	Raglan Hills	OHH-101	Metagabbro	18	300710	5005625	-77.53618	45.17975
01-CMV-015A	Raglan Hills	OHH-101	Metagabbro	18	300601	5006104	-77.53768	45.18223
01-CMV-016A	Raglan Hills	OHH-101	Metagabbro	18	301740	5007373	-77.52170	45.19397
01-CMV-017A	Raglan Hills	OHH-101	Metagabbro	18	303282	5008831	-77.50466	45.20751
01-CMV-018A	Raglan Hills	OHH-101	Metagabbro	18	303224	5008827	-77.50540	45.20746
01-CMV-018B	Raglan Hills	OHH-101	Pegmatitic gabbro	18	303224	5008827	-77.50540	45.20746
01-CMV-019A	Raglan Hills	OHH-101	Olivine pyroxenite	18	303065	5008733	-77.50617	45.20655
01-CMV-020A	Raglan Hills	OHH-101	Hornblendite	18	302539	5008649	-77.51405	45.20564
01-CMV-021A	Raglan Hills	OHH-101	Metagabbro	18	302526	5008576	-77.51418	45.20500
01-CMV-022A	Raglan Hills	OHH-101	Metagabbro	18	302457	5008537	-77.51504	45.20463
01-CMV-023A	Raglan Hills	OHH-101	Metagabbro	18	307626	5010600	-77.45005	45.22462
01-CMV-024A	Raglan Hills	OHH-101	Metagabbro	18	305666	5005974	-77.47822	45.18248
01-CMV-024B	Raglan Hills	OHH-101	Metagabbro	18	305666	5005974	-77.47822	45.18248
01-CMV-025A	Raglan Hills	OHH-101	Metagabbro	18	305420	5006119	-77.47640	45.18374
01-CMV-025B	Raglan Hills	OHH-101	Metagabbro	18	305420	5006119	-77.47640	45.18374
01-CMV-026A	Raglan Hills	OHH-101	Pegmatitic metagabbro	18	306629	5009496	-77.45979	45.21447
01-CMV-026B	Raglan Hills	OHH-101	Metagabbro	18	306629	5009496	-77.45979	45.21447
01-CMV-027A	Raglan Hills	OHH-101	Amphibolite	18	306715	5011476	-77.46217	45.23564
01-CMV-028A	Raglan Hills	OHH-101	Amphibolite	18	308169	5011344	-77.44546	45.23146
01-ERD-036A	Tudor	OHH-102	Pegmatitic gabbro	18	290674	4956625	-77.64255	44.71644
01-ERD-037A	Tudor	OHH-102	Metagabbro	18	290541	4954765	-77.64426	44.71766

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-ERD-038A	Tudor	OHB-102	Gabbronorite	18	290176	4953929	-77.66651	44.71936
01-ERD-039A	Tudor	OHB-102	Gabbronorite	18	290177	4955065	-77.66908	44.72050
01-ERD-040A	Tudor	OHB-102	Olivine gabbronorite	18	290096	4955516	-77.65272	44.72451
01-ERD-041A	Tudor	OHB-102	Metagabbro	18	290692	4955702	-77.65542	44.72664
01-ERD-042A	Tudor	OHB-102	Metagabbro	18	290119	4956543	-77.66271	44.73321
01-ERD-043A	Tudor	OHB-102	Metagabbro	18	290090	4956777	-77.66563	44.73527
01-ERD-044A	Tudor	OHB-102	Metagabbro	18	289766	4957068	-77.66763	44.73785
01-ERD-045A	Tudor	OHB-102	Metagabbro	18	293025	4957432	-77.64094	44.74236
01-ERD-046A	Tudor	OHB-102	Gabbronorite	18	293089	4957592	-77.64431	44.74500
01-ERD-046B	Tudor	OHB-102	Gabbronorite	18	293089	4957592	-77.64431	44.74500
01-ERD-047A	Tudor	OHB-102	Gabbronorite	18	292962	4958014	-77.64907	44.74758
01-ERD-048A	Tudor	OHB-102	Olivine gabbronorite	18	292930	4958565	-77.61970	44.75213
01-ERD-049A	Tudor	OHB-102	Gabbronorite	18	292913	4958705	-77.64605	44.75499
01-ERD-050A	Tudor	OHB-102	Pegmatitic gabbronorite	18	292077	4959112	-77.64699	44.75745
01-ERD-052A	Tudor	OHB-102	Metagabbro	18	290665	4957088	-77.66306	44.73611
01-ERD-053A	Tudor	OHB-102	Altered gabbro	18	290290	4957257	-77.66040	44.73969
01-ERD-054A	Tudor	OHB-102	Gabbronorite	18	290674	4956812	-77.66066	44.73552
01-ERD-055A	Tudor	OHB-102	Clinopyroxenite	18	290451	4956607	-77.67141	44.73364
01-ERD-055B	Tudor	OHB-102	Magnetite layer	18	290451	4956607	-77.67141	44.73364
01-ERD-056A	Tudor	OHB-102	Gabbro	18	290144	4956385	-77.67519	44.73152
01-ERD-057A	Tudor	OHB-102	Metagabbro	18	287654	4956132	-77.67875	44.72934
01-ERD-058A	Tudor	OHB-102	Gabbronorite	18	287623	4955077	-77.68040	44.72770
01-ERD-059A	Tudor	OHB-102	Metagabbro	18	287296	4953704	-77.68356	44.72515
01-ERD-060A	Tudor	OHB-102	Metagabbro	18	292200	4959130	-77.62530	44.76090
01-ERD-061A	Tudor	OHB-102	Tonalite	18	290663	4959263	-77.62946	44.75967
01-ERD-062A	Tudor	OHB-102	Gabbro?	18	290447	4959100	-77.63211	44.75705
01-ERD-063A	Tudor	OHB-102	Metagabbro	18	291115	4958958	-77.63499	44.75545
01-ERD-064A	Tudor	OHB-102	Metagabbro	18	292239	4958704	-77.63686	44.75400
01-ERD-065A	Tudor	OHB-102	Metagabbro	18	290013	4958567	-77.63990	44.75217
01-ERD-066A	Tudor	OHB-102	Pegmatitic gabbro	18	290705	4958565	-77.64572	44.75088
01-CMV-008A	Lingham Lake	OHB-003	Metagabbro	18	301240	4953608	-77.50867	44.70526
01-CMV-008B	Lingham Lake	OHB-003	Metagabbro	18	301240	4953608	-77.50867	44.70526
01-CMV-009A	Lingham Lake	OHB-003	Lherzolite	18	300092	4953325	-77.51064	44.70771
01-CMV-009B	Lingham Lake	OHB-003	Olivine pyroxenite?	18	300092	4953325	-77.51064	44.70771
01-CMV-010A	Lingham Lake	OHB-003	Pyroxenite	18	300065	4953325	-77.51083	44.70011
01-CMV-011A	Lingham Lake	OHB-003	Clinopyroxenite	18	301168	4953648	-77.50082	44.71064
01-CMV-011B	Lingham Lake	OHB-003	Clinopyroxenite	18	301168	4953648	-77.50082	44.71064
01-CMV-012A	Lingham Lake	OHB-003	Lherzolite	18	301176	4953008	-77.50087	44.71176

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
00-CMW-4015A	Lingham Lake	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-067A	Lingham Lake	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-068A	Lingham Lake	[illegible]	Leucogabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-069A	Lingham Lake	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-070A	Lingham Lake	[illegible]	Gabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-071A	Lingham Lake	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-072A	Lingham Lake	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-073A	Lingham Lake	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-074A	Lingham Lake	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-076A	Lingham Lake	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-077A	Lingham Lake	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-078A	Lingham Lake	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-079A	Lingham Lake	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Killer Creek	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-CMW-4050A	Killer Creek	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-CMW-4051A	Killer Creek	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-CMW-4052A	Killer Creek	[illegible]	Hornblendite	18	[illegible]	[illegible]	[illegible]	[illegible]
00-CMW-4053A	Killer Creek	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-CMW-4054A	Killer Creek	[illegible]	Pegmatitic gabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-CMW-4055A	Killer Creek	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-CMW-4057A	Killer Creek	[illegible]	Amphibolite	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-081A	Mountain Grove	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-082A	Mountain Grove	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-083A	Mountain Grove	[illegible]	Pegmatitic gabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-084A	Mountain Grove	[illegible]	Gabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-085A	Mountain Grove	[illegible]	Quartz gabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-086A	Mountain Grove	[illegible]	Olivine gabbronorite	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-087A	Mountain Grove	[illegible]	Monzodiorite	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-088A	Mountain Grove	[illegible]	Metagabbronorite	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-089A	Mountain Grove	[illegible]	Olivine gabbronorite	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-090A	Mountain Grove	[illegible]	Gabbronorite	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-091A	Mountain Grove	[illegible]	Olivine gabbronorite	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-092A	Mountain Grove	[illegible]	Metagabbronorite	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-093A	Mountain Grove	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-094A	Mountain Grove	[illegible]	Pegmatitic gabbronorite	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-095A	Mountain Grove	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-001A	Lavant	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]
00-EBD-001B	Lavant	[illegible]	Metagabbro	18	[illegible]	[illegible]	[illegible]	[illegible]

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
[illegible]	Lavant	[illegible]	Hornblendite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Pegmatitic gabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Orthopyroxene gabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Gabbro?	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Leucogabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Gabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Gabbronorite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Gabbronorite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Gabbronorite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lavant	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Wolfe Lake	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Wolfe Lake	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Wolfe Lake	[illegible]	Gabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Wolfe Lake	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Wolfe Lake	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Wolfe Lake	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Wolfe Lake	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Wolfe Lake	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Wolfe Lake	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hamilton Bay	[illegible]	Tonalite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hamilton Bay	[illegible]	Tonalite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hamilton Bay	[illegible]	Tonalite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hamilton Bay	[illegible]	Tonalite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hamilton Bay	[illegible]	Tonalite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hamilton Bay	[illegible]	Tonalite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hamilton Bay	[illegible]	Quartz diorite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hamilton Bay	[illegible]	Tonalite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hamilton Bay	[illegible]	Granodiorite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Hamilton Bay	[illegible]	Tonalite	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lee Lake	[illegible]	Gabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	Lee Lake	[illegible]	Metagabbro	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Appendix 1 (cont.) - Sample locations and rock names.

Sample Number	Intrusion Name	Intrusion Number	Rock Name	Zone	UTM East Nad27	UTM North Nad27	Longitude	Latitude
01-ERD-030A	Leo Lake	OTH-109	Metagabbro	18	403133	4923387	-76.21729	44.45931
01-ERD-031A	Leo Lake	OTH-109	Gabbronorite	18	401456	4922321	-76.23816	44.44949
01-ERD-032A	Leo Lake	OTH-109	Olivine-gabbronorite	18	400659	4922535	-76.24822	44.45130
01-ERD-033A	Leo Lake	OTH-109	Gabbro	18	400676	4922038	-76.24791	44.44683
01-ERD-034A	Leo Lake	OTH-109	Metagabbro	18	399729	4922024	-76.25981	44.44658
01-ERD-034B	Leo Lake	OTH-109	Gabbronorite	18	399729	4922024	-76.25981	44.44658
01-ERD-035A	Leo Lake	OTH-109	Metagabbro	18	399206	4922003	-76.26637	44.44631

Appendix 2

Major Element Geochemistry as Weight Percent Oxide (wt%)

The numbers in italics represent data from other sources, which may or may not have been previously published, and were included in this report to complement the new data. References for this data can be found in the Miscellaneous Notes of each intrusion (see Appendix 4)

Abbreviations:
alk - alkali
anorth - anorthositic
bt - biotite
bx - breccia
chl - chlorite
c, cpx - clinopyroxene
fel - felsic
fol - foliated
fp - feldspar
gab - gabbro
hb - hornblende
int - intermediate
mv - muscovite
NA - not analysed
ND - not detected
ol - olivine
opx - orthopyroxene
pegm - pegmatitic
pg - plagioclase
porphy - porphyritic
px - pyroxene
qz - quartz
sul - sulphide, sulphides
syen - syenite

Appendix 2 - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit---->)	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	S	TOTAL
					0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.05%	0.01%	
01-CAM-100A	Pipestone Bay	OTH-001	Grab	Talc-carbonate schist	28.16	0.01	0.61	8.94	0.05	29.05	8.74	ND	ND	ND	24.60	ND	100.16
01-CAM-101A	Pipestone Bay	OTH-001	Grab	Talc-carbonate schist	32.85	0.03	0.87	9.29	0.05	34.41	0.02	0.02	ND	ND	21.84	ND	99.35
01-CAM-102A	Pipestone Bay	OTH-001	Grab	Talc-carbonate schist	31.40	0.01	0.57	5.66	0.06	36.38	ND	ND	ND	ND	25.48	ND	99.47
01-CAM-103A	Pipestone Bay	OTH-001	Grab	Talc-carbonate schist	29.62	ND	0.56	7.64	0.08	35.12	0.43	0.01	ND	ND	26.09	ND	99.55
01-CAM-104A	Pipestone Bay	OTH-001	Grab	Dunite	38.05	0.02	0.69	5.87	0.04	38.76	1.30	ND	ND	ND	15.22	0.01	99.95
01-CAM-105A	Pipestone Bay	OTH-001	Grab	Dunite	37.36	0.05	1.40	9.77	0.08	37.42	0.35	ND	ND	ND	11.86	ND	98.29
01-CAM-106A	Pipestone Bay	OTH-001	Grab	Carbonate-talc schist	20.08	0.01	0.44	4.30	0.14	34.26	7.33	0.01	ND	ND	33.41	0.03	99.98
01-CAM-107A	Pipestone Bay	OTH-001	Grab	Dunite	36.65	0.03	0.74	8.56	0.09	37.99	0.26	0.01	ND	ND	15.17	0.01	99.49
01-CAM-108A	Pipestone Bay	OTH-001	Grab	Dunite	38.53	0.07	2.08	8.96	0.17	37.52	0.15	ND	ND	ND	11.67	ND	99.14
01-CAM-109A	Pipestone Bay	OTH-001	Grab	Peridotite	29.34	0.02	0.59	7.30	0.10	29.21	8.85	0.02	ND	ND	24.54	0.04	99.99
01-CAM-110A	Pipestone Bay	OTH-001	Grab	Dunite	35.21	0.02	0.38	8.98	0.08	35.63	4.05	ND	ND	ND	15.66	ND	99.99
01-CAM-111A	Pipestone Bay	OTH-001	Grab	Peridotite to dunite	39.38	0.09	2.92	9.43	0.11	34.52	0.57	0.02	ND	ND	10.82	ND	97.87
01-CAM-112A	Pipestone Bay	OTH-001	Grab	Peridotite to dunite	40.40	0.16	3.64	9.20	0.09	32.35	3.14	0.09	ND	ND	10.88	ND	99.96
01-CAM-113A	Pipestone Bay	OTH-001	Grab	Metagabbro	52.12	0.60	14.58	12.28	0.21	7.64	10.53	2.09	0.38	0.05	0.88	0.22	101.36
01-CAM-114A	Pipestone Bay	OTH-001	Grab	Peridotite	32.95	0.02	0.53	6.51	0.06	32.26	4.37	ND	ND	ND	23.52	ND	100.22
01-CAM-115A	Pipestone Bay	OTH-001	Grab	Dunite	33.19	0.01	0.30	7.55	0.08	34.94	5.72	ND	ND	ND	17.94	ND	99.72
01-MAH-005A	Pipestone Bay	OTH-001	Grab	Dunite	37.22	0.07	1.77	8.00	0.08	37.07	0.47	0.02	ND	ND	13.71	0.02	98.40
01-MAH-006A	Pipestone Bay	OTH-001	Grab	Peridotite or pyroxenite	42.29	0.04	1.05	8.72	0.10	28.07	5.78	0.01	ND	ND	13.86	0.01	99.89
01-MAH-006B	Pipestone Bay	OTH-001	Grab	Hornblende-leucogabbro dike	59.13	0.48	18.92	3.09	0.06	2.73	1.71	9.00	2.21	0.14	2.50	0.01	99.97
01-MAH-007A	Pipestone Bay	OTH-001	Grab	Dunite	35.56	0.05	1.08	8.48	0.09	36.66	3.16	0.01	ND	ND	14.73	0.02	99.81
01-MAH-008A	Pipestone Bay	OTH-001	Grab	Peridotite or pyroxenite?	38.92	0.08	1.72	10.36	0.11	33.08	0.66	0.01	ND	ND	14.73	0.01	99.67
01-MAH-009A	Pipestone Bay	OTH-001	Grab	Peridotite or dunite?	29.36	0.02	0.49	7.10	0.14	35.66	0.28	ND	ND	ND	25.57	0.01	98.62
01-MAH-010A	Pipestone Bay	OTH-001	Grab	Peridotite	30.08	0.01	0.29	4.87	0.16	28.08	12.68	0.02	ND	ND	24.67	0.05	100.85
01-CMV-075B1	Trout Bay	OTH-002	Grab	Ultramafic flow	39.37	0.25	10.99	15.57	0.14	19.71	7.07	0.17	ND	ND	6.40	0.05	99.69
01-CMV-075B2	Trout Bay	OTH-002	Grab	Cannot be identified	15.16	0.11	1.75	84.51	0.04	2.11	1.01	ND	0.02	0.02	3.83	8.02	108.25
01-CMV-075C	Trout Bay	OTH-002	Grab	Metagabbro	44.92	1.04	16.83	12.09	0.14	10.83	9.66	2.16	0.10	0.10	1.99	0.08	99.86
01-CMV-075D	Trout Bay	OTH-002	Grab	Metagabbro	48.08	0.50	18.13	10.54	0.15	8.65	10.54	2.49	0.52	0.04	1.25	0.02	100.88
01-CMV-075E	Trout Bay	OTH-002	Grab	Mafic volcanic	31.01	0.03	0.84	52.38	0.23	3.45	0.43	ND	0.01	0.07	14.68	18.30	103.10
01-CMV-076A	Trout Bay	OTH-002	Grab	Metagabbro	48.09	1.62	14.92	15.56	0.21	6.77	10.39	2.53	0.19	0.13	0.50	0.08	100.90
01-CMV-077A	Trout Bay	OTH-002	Grab	Gabbro	45.69	0.46	17.80	10.14	0.16	10.62	12.22	1.41	0.12	0.03	1.23	0.06	99.87
01-CMV-078A	Trout Bay	OTH-002	Grab	Mafic volcanic	24.92	0.36	7.56	48.20	0.12	13.74	2.07	0.11	0.02	0.01	2.89	0.05	99.99
01-CMV-078B	Trout Bay	OTH-002	Grab	Mafic metavolcanic	29.74	0.34	7.86	37.44	0.16	15.32	4.35	0.15	ND	ND	3.25	0.21	98.62
01-CMV-083A	Trout Bay	OTH-002	Grab	Metagabbro	44.44	0.81	18.50	7.62	0.15	2.28	13.97	3.60	1.48	0.06	7.77	0.01	100.69
01-CMV-084A	Trout Bay	OTH-002	Grab	Metagabbro	51.86	0.81	24.18	10.72	0.20	3.63	4.75	1.95	0.50	0.06	2.69	0.03	101.36
01-CMV-085A	Trout Bay	OTH-002	Grab	Metagabbro	47.08	0.87	20.49	12.35	0.14	6.54	9.95	2.08	0.15	0.07	1.56	0.08	101.28
01-CMV-085B	Trout Bay	OTH-002	Grab	Metagabbro	47.85	0.87	21.84	9.79	0.15	5.81	10.95	2.27	0.20	0.07	1.43	0.02	101.23

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	S	TOTAL
					0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.05%	0.01%	
01-CMV-086A	Trout Bay	OTH-002	Grab	Komatiite	43.58	0.19	5.12	10.63	0.21	25.58	6.69	0.06	ND	ND	7.75	0.14	99.80
01-CMV-086B	Trout Bay	OTH-002	Grab	Komatiite	43.46	0.34	7.98	12.33	0.23	22.11	8.08	0.24	ND	0.02	5.76	0.02	100.58
01-ERD-202A	Golden Arm	OTH-003	Grab	Metavolcanic	42.89	0.50	6.91	13.05	0.19	21.58	9.72	0.11	ND	0.03	4.92	0.03	99.90
01-ERD-203A	Golden Arm	OTH-003	Grab	Metamelagabbro/pyroxenite	47.98	0.69	7.12	13.92	0.24	13.00	14.73	1.70	0.16	0.04	1.00	ND	100.56
01-ERD-204A	Golden Arm	OTH-003	Grab	Px-hornblendite/pyroxenite	49.21	0.55	5.25	13.88	0.22	15.40	14.27	0.94	0.04	0.03	1.05	0.01	100.83
01-ERD-205A	Golden Arm	OTH-003	Grab	Wehrlite (peridotite)	39.57	0.32	3.38	12.00	0.19	27.44	7.90	0.04	ND	0.01	9.65	0.03	100.49
01-ERD-206A	Golden Arm	OTH-003	Grab	Wehrlite to dunite	40.02	0.38	4.83	11.25	0.18	27.86	5.20	0.02	ND	0.02	8.78	0.01	98.54
01-ERD-207A	Golden Arm	OTH-003	Grab	Wehrlite (peridotite)	39.75	0.28	2.81	11.37	0.19	31.72	3.28	0.03	0.01	0.01	10.03	0.01	99.49
01-ERD-208A	Golden Arm	OTH-003	Grab	Olivine-websterite	41.77	0.36	3.60	13.15	0.18	25.38	7.34	0.02	ND	0.02	7.58	0.10	99.41
01-ERD-209A	Golden Arm	OTH-003	Grab	Peridotite	39.85	0.28	2.45	11.84	0.16	31.74	2.11	0.02	ND	0.01	9.64	0.02	98.11
01-ERD-210A	Golden Arm	OTH-003	Grab	Dunite	37.11	0.08	2.06	10.12	0.09	37.10	ND	ND	ND	ND	11.81	0.22	98.32
01-ERD-211A	Golden Arm	OTH-003	Grab	Dunite	37.12	0.06	1.48	8.12	0.10	37.45	1.80	0.02	ND	ND	13.91	0.03	100.04
01-ERD-212A	Golden Arm	OTH-003	Grab	Dunite	33.62	0.07	1.79	7.72	0.16	38.06	0.03	0.01	ND	ND	17.12	0.46	98.57
01-ERD-213A	Golden Arm	OTH-003	Grab	Peridotite	37.63	0.24	2.67	12.46	0.14	32.51	2.53	0.05	ND	0.01	11.10	0.01	99.34
01-ERD-214A	Golden Arm	OTH-003	Grab	Peridotite	37.71	0.17	2.07	13.12	0.13	32.73	2.26	0.04	ND	ND	11.61	ND	99.84
01-ERD-215A	Golden Arm	OTH-003	Grab	Peridotite	41.48	0.36	3.62	13.20	0.18	26.12	6.45	0.02	ND	0.02	7.85	0.10	99.31
01-ERD-216A	Golden Arm	OTH-003	Grab	Pyroxenite	47.79	0.36	4.18	12.08	0.21	18.71	13.28	0.29	0.03	0.02	3.72	0.02	100.67
01-ERD-217A	Golden Arm	OTH-003	Grab	Metamelagabbro/pyroxenite	49.35	0.58	5.90	12.86	0.23	13.63	12.23	1.88	0.36	0.03	3.66	0.02	100.70
01-ERD-218A	Golden Arm	OTH-003	Grab	Peridotite	37.81	0.22	2.45	10.37	0.17	30.89	4.58	0.02	ND	ND	12.40	0.02	98.93
01-ERD-219A	Golden Arm	OTH-003	Grab	Pyroxenite	40.66	0.24	2.10	13.22	0.18	29.56	4.58	0.03	ND	ND	9.12	0.02	99.70
01-ERD-220A	Golden Arm	OTH-003	Grab	Pyroxenite to peridotite	44.79	0.28	4.35	10.91	0.17	21.70	11.92	0.10	0.01	0.01	6.48	0.01	100.72
01-ERD-221A	Golden Arm	OTH-003	Grab	Peridotite	39.52	0.27	2.74	11.95	0.17	29.30	6.28	0.04	ND	ND	9.85	0.04	100.14
01-ERD-193A	Hammel Lake	OTH-004	Grab	Metaleucogabbro	51.92	0.99	19.26	8.70	0.11	4.37	8.15	4.06	1.81	0.42	0.93	0.01	100.73
01-ERD-194A	Hammel Lake	OTH-004	Grab	Metagabbro	51.36	0.62	18.47	7.68	0.11	6.65	8.35	3.60	1.45	0.20	2.22	0.01	100.71
01-ERD-195A	Hammel Lake	OTH-004	Grab	Leucogabbro	51.82	0.74	19.27	7.98	0.11	6.03	9.45	3.81	1.23	0.20	0.28	ND	100.91
01-ERD-196A	Hammel Lake	OTH-004	Grab	Gabbro-metagabbro	53.02	0.73	17.74	8.73	0.13	6.30	8.43	3.97	0.71	0.26	1.13	0.01	101.14
01-ERD-197A	Hammel Lake	OTH-004	Grab	Gabbro-metagabbro	50.61	0.48	16.41	9.67	0.14	8.47	9.86	2.76	0.87	0.14	1.83	0.01	101.26
01-ERD-198A	Hammel Lake	OTH-004	Grab	Granite gneiss	63.88	0.51	16.14	5.08	0.06	2.13	3.74	3.83	3.31	0.16	1.08	0.26	99.92
01-ERD-199A	Hammel Lake	OTH-004	Grab	Tonalite gneiss	57.89	0.78	15.84	9.04	0.14	4.39	7.38	3.45	1.12	0.26	0.54	ND	100.84
01-ERD-200A	Hammel Lake	OTH-004	Grab	Metaleucogabbro	52.79	1.10	18.09	9.69	0.13	4.57	7.70	4.26	1.49	0.43	0.41	ND	100.67
01-ERD-201A	Hammel Lake	OTH-004	Grab	Quartz-diorite to quartz-gabbro	53.22	1.08	15.87	10.04	0.14	5.73	8.55	3.01	1.43	0.69	0.69	0.02	100.44
01-ERD-226A	Hammel Lake	OTH-004	Grab	Tonalite	52.38	1.19	16.92	9.67	0.14	4.74	7.33	4.22	2.13	0.87	0.86	0.08	100.44
01-ERD-222A	Pure Gold Gabbro	OTH-005	Grab	Hornblende-quartz schist	58.19	0.72	17.13	8.07	0.12	4.02	5.35	3.86	2.31	0.23	0.71	0.02	100.70
01-ERD-223A	Pure Gold Gabbro	OTH-005	Grab	Metavolcanic breccia?	73.14	0.40	12.04	4.39	0.11	1.37	6.11	0.49	1.15	0.07	1.66	0.09	100.92
01-ERD-224A	Pure Gold Gabbro	OTH-005	Grab	Garnet-bt-mv-qz schist	75.78	0.39	12.77	3.15	0.06	0.52	1.10	1.69	3.08	0.08	1.52	0.41	100.14
01-ERD-225A	Pure Gold Gabbro	OTH-005	Grab	Metadiorite to metagabbro	55.06	0.54	14.10	8.40	0.15	7.41	7.31	2.95	3.61	0.31	0.79	0.01	100.62
01-ERD-189A	Dome-McDo-Bat.	OTH-006	Grab	Metagabbro	50.34	0.88	15.35	12.50	0.19	5.69	10.46	3.53	0.14	0.06	1.93	0.12	101.06
01-ERD-190A	Dome-McDo-Bat.	OTH-006	Grab	Metamelagabbro	48.16	0.60	13.58	11.51	0.16	10.53	10.53	1.90	0.53	0.04	2.61	0.01	100.14

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-ERD-191A	Dome-McDo-Bat.	OTH-006	Grab	Metamelagabbro	47.36	0.94	15.83	12.16	0.17	7.17	12.55	1.78	0.11	0.08	2.77	0.22	100.93
01-ERD-192A	Dome-McDo-Bat.	OTH-006	Grab	Metamelagabbro	49.41	0.63	15.74	10.40	0.14	9.76	8.20	2.80	0.32	0.04	3.80	0.02	101.24
01-ERD-192B	Dome-McDo-Bat.	OTH-006	Grab	Mafic schist or fol. metagabbro	48.75	0.63	15.30	10.86	0.12	9.28	6.11	1.34	1.46	0.04	7.75	0.02	101.63
01-MAH-001A	Dome-McDo-Bat.	OTH-006	Grab	Metamelagabbro/gabbronorite	50.98	0.67	14.66	5.10	0.12	8.02	14.71	3.49	0.15	0.05	2.52	0.01	100.49
01-MAH-002A	Dome-McDo-Bat.	OTH-006	Grab	Metamelagabbro	49.66	0.68	13.25	11.84	0.20	8.38	11.70	2.14	0.16	0.05	3.06	0.03	101.11
01-MAH-003A	Dome-McDo-Bat.	OTH-006	Grab	Metamelagabbro	48.32	0.60	13.20	11.54	0.19	11.28	9.31	2.79	0.09	0.04	2.71	0.04	100.06
01-CMV-087A	Peterson Property	OTH-007	Core	Mafic volcanic?	39.34	2.67	11.86	27.39	0.13	3.64	8.34	1.39	0.34	0.63	0.65	4.44	96.37
01-CMV-087B	Peterson Property	OTH-007	Core	Gabbro	33.11	2.03	10.47	45.49	0.29	2.52	2.77	0.28	0.06	0.45	3.80	12.10	101.28
01-CMV-087C	Peterson Property	OTH-007	Core	Banded iron formation	68.49	0.15	5.33	15.53	0.22	3.39	4.21	0.24	0.47	0.08	2.01	0.71	100.12
01-CMV-087D	Peterson Property	OTH-007	Core	Gabbro	58.93	1.05	15.76	6.75	0.08	3.04	4.09	4.48	4.29	0.68	0.76	0.13	99.91
01-CMV-088A	Peterson Property	OTH-007	Core	Mafic volcanic	48.46	1.14	13.48	16.19	0.26	6.41	7.54	2.15	2.57	0.08	2.51	0.05	100.78
01-CMV-088B	Peterson Property	OTH-007	Core	Mafic volcanic	50.72	0.71	9.17	13.60	0.21	11.26	10.34	2.94	0.04	0.05	1.20	0.02	100.23
01-CMV-088C	Peterson Property	OTH-007	Core	Peridotite	39.18	0.34	4.34	11.68	0.17	26.41	5.40	0.01	ND	0.03	12.99	0.04	100.55
01-CMV-088D	Peterson Property	OTH-007	Core	Ultramafic rock?	39.28	0.43	4.97	12.46	0.16	24.50	5.80	0.03	ND	0.01	10.39	1.27	98.04
01-CMV-088E	Peterson Property	OTH-007	Core		40.96	0.31	4.44	13.26	0.10	27.55	3.19	0.03	0.01	0.01	10.00	0.06	99.87
01-CMV-089A	Peterson Property	OTH-007	Grab	Gabbro	48.40	0.86	16.02	12.98	0.22	8.20	9.94	2.75	0.41	0.06	0.74	0.07	100.58
01-CMV-090A	Peterson Property	OTH-007	Grab	Gabbro	57.80	0.73	15.95	6.12	0.10	4.12	8.40	3.31	1.28	0.24	2.06	0.40	100.11
01-CMV-091A	Peterson Property	OTH-007	Grab	Gabbro	49.12	0.93	13.02	12.19	0.49	6.12	12.74	1.13	0.82	0.04	4.46	0.09	101.08
01-CMV-092A	Peterson Property	OTH-007	Grab	Metagabbro	50.27	1.95	12.72	19.54	0.25	5.96	7.58	2.67	0.20	0.15	0.19	0.01	101.49
01-CMV-079A	Pakwash Lake	OTH-008	Grab	Quartz-monzodiorite	60.32	0.56	16.19	5.63	0.09	3.77	5.54	4.29	2.40	0.19	1.14	ND	100.14
01-CMV-080A	Pakwash Lake	OTH-008	Grab	Quartz-diorite	55.84	0.76	13.49	8.40	0.15	8.39	7.56	2.71	2.08	0.32	0.91	0.02	100.61
01-CMV-081A	Pakwash Lake	OTH-008	Grab	Quartz-monzodiorite	60.44	0.57	15.59	6.09	0.11	4.41	5.62	3.54	2.98	0.19	0.70	0.01	100.22
01-CMV-082A	Bruce Lake	OTH-009	Grab	Metagabbro	47.82	1.19	14.41	13.60	0.20	7.81	12.46	2.10	0.35	0.12	0.76	0.12	100.82
01-CMV-082B	Bruce Lake	OTH-009	Grab	Metagabbro	47.91	1.27	14.01	14.24	0.21	7.31	11.46	2.65	0.45	0.13	0.71	0.05	100.36
01-CAM-096A	Snakeweed Lake	OTH-010	Grab	Pg-bearing hb-pyroxenite	42.91	1.72	9.37	15.06	0.22	12.38	14.04	2.28	1.03	0.11	0.83	0.29	99.95
01-CAM-096B	Snakeweed Lake	OTH-010	Grab	Pg-bearing px-hornblendite	39.39	1.98	12.32	19.18	0.19	9.29	11.78	2.60	1.03	1.10	0.65	0.30	99.51
01-CAM-097A	Snakeweed Lake	OTH-010	Grab	Px-hb-gabbronorite	43.36	2.10	14.21	15.42	0.17	8.15	10.52	3.58	1.11	1.19	0.98	0.30	100.80
01-CAM-098A	Snakeweed Lake	OTH-010	Grab	Melapyroxene to hb-gabbro	41.32	1.93	11.03	16.86	0.24	10.22	12.21	2.85	1.08	0.72	0.62	0.37	99.07
01-CAM-099A	Snakeweed Lake	OTH-010	Grab	Pegm. melapyroxene-hb-gabbro	35.94	2.35	12.85	20.20	0.20	9.91	12.60	2.15	0.98	1.32	1.11	0.50	99.61
93-JRP-100	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.78	NA
93-JRP-100D	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.57	NA
93-JRP-101	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.55	NA
93-JRP-62	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.45	NA
93-JRP-68	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.53	NA
93-JRP-69	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.24	NA
93-JRP-97	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.76	NA
94-JRP-1003	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*47.03*	*0.56*	*3.71*	*21.19*	*0.16*	*14.37*	*9.91*	*0.45*	*0.40*	*0.11*	*0.54*	0.11	98.43
94-JRP-1004	Rex-Werner-Bug	OTH-011	Grab	Orthopyroxene-gabbro	45.14	0.14	13.52	21.33	0.06	4.88	2.91	1.48	1.00	0.57	9.29	8.35	100.33

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	S	TOTAL
				(Detection Limit-->)	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.05%	0.01%	
94-JRP-1019	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	50.70	0.16	3.47	14.94	0.16	16.92	13.03	0.59	0.32	0.23	0.73	0.07	101.25
94-JRP-1026	Rex-Werner-Bug	OTH-011	Grab	Orthopyroxene-gabbro	*44.13*	*1.03*	*13.65*	*15.98*	*0.12*	*9.00*	*11.59*	*1.32*	*0.69*	*0.07*	*0.51*	0.38	*98.09*
94-JRP-1026A	Rex-Werner-Bug	OTH-011	Grab	Orthopyroxene-gabbro	44.78	1.04	15.04	16.50	0.12	9.20	11.60	1.42	0.73	0.07	0.62	0.10	101.14
94-JRP-1028	Rex-Werner-Bug	OTH-011	Grab	Leucogabbro	*46.89*	*0.16*	*26.50*	*7.24*	*0.04*	*3.73*	*12.57*	*1.57*	*0.88*	*ND*	*0.65*	0.28	*100.23*
94-JRP-1041	Rex-Werner-Bug	OTH-011	Grab	Leucogabbro	*43.09*	*0.24*	*27.23*	*9.62*	*0.08*	*10.91*	*0.97*	*0.83*	*3.65*	*ND*	*2.61*	0.01	*99.23*
94-JRP-1069	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*38.85*	*0.27*	*7.34*	*14.84*	*0.07*	*23.40*	*4.73*	*0.51*	*1.82*	*ND*	*5.50*	0.89	*97.33*
94-JRP-1078	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*39.41*	*0.30*	*8.55*	*14.63*	*0.10*	*22.61*	*6.41*	*0.53*	*0.24*	*ND*	*4.52*	0.97	*97.30*
94-JRP-1079	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*39.26*	*0.31*	*7.86*	*15.47*	*0.09*	*22.59*	*7.00*	*0.49*	*0.17*	*ND*	*4.82*	1.62	*98.06*
94-JRP-1083	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*38.18*	*1.54*	*16.89*	*22.65*	*0.57*	*6.14*	*11.40*	*0.43*	*0.73*	*0.13*	*1.84*	1.23	*100.50*
94-JRP-1085	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	35.79	0.25	8.23	16.92	0.07	21.91	4.30	0.62	0.10	ND	5.55	0.59	93.76
94-JRP-1086	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*41.20*	*0.19*	*7.89*	*17.07*	*0.06*	*19.72*	*6.46*	*0.84*	*0.16*	*ND*	*3.53*	2.16	*97.12*
94-JRP-1087	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	35.90	0.27	8.06	20.40	0.10	16.33	6.73	0.95	0.09	0.02	6.75	2.16	95.60
94-JRP-1091	Rex-Werner-Bug	OTH-011	Grab	Amphibolite	45.80	0.28	3.64	14.73	0.41	13.03	19.40	0.17	0.08	0.02	0.49	2.05	98.06
94-JRP-1094	Rex-Werner-Bug	OTH-011	Grab	Skarn	39.12	0.70	8.03	20.81	0.48	11.91	15.69	0.41	0.22	0.03	1.77	0.29	99.18
94-JRP-1100	Rex-Werner-Bug	OTH-011	Grab	Skarn	26.34	0.34	18.54	16.18	0.34	8.65	8.69	ND	0.56	0.09	5.24	7.11	84.83
94-JRP-1102	Rex-Werner-Bug	OTH-011	Grab	Skarn	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	2.21	*NA*
94-JRP-1107	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*40.97*	*0.33*	*9.18*	*14.35*	*0.12*	*22.19*	*7.82*	*0.64*	*0.15*	*ND*	*4.03*	1.43	*99.78*
94-JRP-1109	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	39.19	0.29	8.72	16.63	0.17	22.26	4.82	0.66	0.13	ND	3.74	2.73	96.62
94-JRP-1114	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*40.67*	*0.26*	*8.17*	*15.19*	*0.06*	*20.63*	*6.16*	*0.59*	*0.18*	*ND*	*3.55*	0.99	*95.46*
94-JRP-1119	Rex-Werner-Bug	OTH-011	Grab	Skarn	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	2.16	*NA*
94-JRP-1122	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*31.04*	*0.17*	*6.26*	*19.02*	*0.06*	*27.10*	*1.50*	*0.12*	*0.04*	*ND*	*9.29*	1.98	*94.60*
94-JRP-1123	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*13.86*	*0.43*	*10.26*	*25.40*	*0.21*	*23.53*	*0.76*	*0.04*	*0.03*	*ND*	*4.33*	0.90	*78.85*
94-JRP-1124	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	35.49	0.22	5.78	15.98	0.07	26.63	3.41	0.42	0.19	0.08	7.51	2.35	95.78
94-JRP-1125	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*20.12*	*0.30*	*7.67*	*21.31*	*0.15*	*26.63*	*1.82*	*0.05*	*0.06*	*ND*	*6.45*	1.92	*84.56*
94-JRP-1127	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*29.13*	*0.41*	*10.64*	*21.11*	*0.05*	*16.09*	*4.24*	*0.43*	*0.10*	*ND*	*2.97*	0.48	*85.17*
94-JRP-1128	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*39.86*	*0.34*	*7.49*	*16.67*	*ND*	*19.54*	*6.87*	*0.74*	*0.15*	*ND*	*3.59*	2.61	*95.25*
94-JRP-1130	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*25.53*	*0.34*	*7.94*	*20.34*	*0.03*	*26.29*	*1.88*	*0.07*	*0.07*	*ND*	*3.72*	1.27	*86.21*
94-JRP-1131	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*36.59*	*0.29*	*8.95*	*16.75*	*0.03*	*23.92*	*2.93*	*0.23*	*0.11*	*ND*	*3.67*	0.69	*93.47*
94-JRP-1132	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*20.56*	*0.37*	*7.85*	*20.76*	*0.02*	*27.49*	*1.88*	*0.07*	*0.07*	*ND*	*3.82*	0.69	*82.89*
94-JRP-1137	Rex-Werner-Bug	OTH-011	Grab	Skarn	42.10	0.21	7.28	14.42	0.19	13.44	17.13	0.59	0.66	0.10	0.54	1.98	96.66
94-JRP-1139	Rex-Werner-Bug	OTH-011	Grab	Skarn	42.69	0.22	7.07	13.91	0.17	14.01	18.66	0.51	0.49	0.05	0.93	0.89	98.71
94-JRP-1154	Rex-Werner-Bug	OTH-011	Grab	Gabbro	*46.75*	*1.25*	*12.70*	*15.62*	*0.42*	*12.00*	*9.74*	*0.52*	*0.77*	*0.09*	*0.51*	ND	*100.37*
01-CMV-066A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	43.49	2.39	14.91	18.96	0.18	6.87	10.66	2.06	0.11	0.01	0.92	0.24	100.56
01-CMV-067A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	46.18	1.86	16.14	15.74	0.17	6.16	12.32	2.56	0.10	0.02	0.06	0.27	101.30
01-CMV-067B	Mulcahy Lake	OTH-012	Grab	Gabbronorite	45.54	2.04	15.41	17.26	0.18	6.80	11.25	2.33	0.08	0.02	0.44	0.21	101.35
01-CMV-068A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	48.34	1.15	18.94	12.61	0.16	6.30	9.85	2.67	0.17	0.04	1.06	0.07	101.30
01-CMV-069A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	43.20	3.79	13.93	21.71	0.28	4.95	9.86	2.39	0.19	0.96	ND	0.01	100.96
01-CMV-070A	Mulcahy Lake	OTH-012	Grab	Metagabbro	51.36	0.95	18.43	10.12	0.17	5.12	10.16	3.39	0.34	0.29	0.72	0.03	101.06

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name	SiO$_2$	TiO$_2$	Al$_2$O$_3$	Fe$_2$O$_3$	MnO	MgO	CaO	Na$_2$O	K$_2$O	P$_2$O$_5$	LOI	S	TOTAL
				(Detection Limit-->)	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.05%	0.01%	
01-CMV-070B	Mulcahy Lake	OTH-012	Grab	Metagabbro	45.70	2.37	16.85	20.03	0.32	2.75	8.74	3.52	0.24	1.01	ND	0.13	101.32
01-CMV-071A	Mulcahy Lake	OTH-012	Grab	Gabbro	49.38	0.43	20.56	7.80	0.13	6.59	11.52	2.31	0.20	0.02	1.90	0.10	100.84
01-CMV-072A	Mulcahy Lake	OTH-012	Grab	Metagabbro	49.06	0.32	18.02	8.69	0.15	8.31	10.73	2.20	0.21	0.01	2.19	0.08	99.90
01-CMV-073A	Mulcahy Lake	OTH-012	Grab	Metagabbro	49.06	0.31	18.84	7.50	0.13	7.27	11.15	2.51	0.25	0.02	1.83	0.12	98.87
01-CMV-074A	Mulcahy Lake	OTH-012	Grab	Hornblende-gabbro	56.63	0.82	16.49	9.10	0.14	3.99	7.72	3.64	0.60	0.13	0.94	0.07	100.20
01-CMV-074C	Mulcahy Lake	OTH-012	Grab	Gabbro	48.52	0.35	12.76	11.27	0.19	12.78	9.02	1.53	0.23	ND	3.58	0.08	100.24
01-ERD-227A	Mulcahy Lake	OTH-012	Grab	Pyroxene-hornblende-gabbro	46.92	0.58	19.25	10.00	0.14	8.00	11.52	2.10	0.17	0.20	2.21	0.06	101.09
01-ERD-228A	Mulcahy Lake	OTH-012	Grab	Pyroxene-hornblende-gabbro	44.89	2.00	15.50	15.47	0.16	7.16	11.36	1.48	0.11	0.02	2.67	0.14	100.82
01-ERD-229A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	48.94	0.44	20.17	8.26	0.14	7.48	12.35	1.99	0.11	0.05	0.51	0.07	100.43
01-ERD-230A	Mulcahy Lake	OTH-012	Grab	Leucogabbro	48.58	0.50	21.53	7.35	0.11	6.08	12.41	2.25	0.18	0.04	1.41	0.06	100.45
01-ERD-231A	Mulcahy Lake	OTH-012	Grab	Gabbro	43.75	3.80	17.42	15.64	0.20	5.53	10.24	2.80	0.13	0.02	1.09	0.17	100.62
01-ERD-232A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	50.43	0.39	20.97	8.14	0.14	7.04	10.84	2.46	0.10	0.11	0.40	0.05	101.04
01-ERD-233A	Mulcahy Lake	OTH-012	Grab	Pyroxene-hornblende-gabbro	48.80	0.44	23.49	7.06	0.09	4.79	10.46	3.15	0.14	0.03	1.04	0.02	99.47
01-ERD-234A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	46.14	1.09	19.99	12.02	0.12	5.44	10.99	2.85	0.09	0.02	0.77	0.08	99.52
01-ERD-235A	Mulcahy Lake	OTH-012	Grab	Olivine-gabbronorite	47.63	0.32	20.98	9.99	0.14	8.51	11.31	2.24	0.07	0.09	0.22	0.05	101.50
01-ERD-136A	Denmark/Rupert	OTH-013	Grab	Metagabbro	45.50	0.89	16.30	14.00	0.16	7.77	12.01	1.55	0.31	0.02	2.18	0.12	100.70
01-ERD-137A	Denmark/Rupert	OTH-013	Grab	Metagabbro?	50.11	0.29	17.75	7.97	0.17	8.55	12.30	1.47	0.19	0.03	2.27	0.09	101.10
01-ERD-138A	Denmark/Rupert	OTH-013	Grab	Metagabbro	50.47	0.27	17.01	7.76	0.15	9.82	12.46	1.35	0.15	0.03	1.72	0.05	101.19
01-ERD-139A	Denmark/Rupert	OTH-013	Grab	Cannot be identified	43.26	0.66	6.26	19.25	0.24	19.89	4.53	0.54	0.20	0.02	3.87	2.05	98.73
01-ERD-139B	Denmark/Rupert	OTH-013	Grab	Olivine-gabbronorite	47.41	0.31	11.40	12.89	0.20	18.69	7.30	1.08	0.08	0.02	0.94	0.10	100.33
01-ERD-140A	Denmark/Rupert	OTH-013	Grab	Gabbronorite	48.55	0.58	16.40	10.45	0.17	9.22	10.92	2.08	0.11	0.01	2.43	0.12	100.92
01-ERD-141A	Denmark/Rupert	OTH-013	Grab	Metagabbro	51.22	0.67	17.31	8.93	0.16	6.27	9.39	2.73	0.31	0.10	3.88	0.03	100.97
01-ERD-142A	Denmark/Rupert	OTH-013	Grab	Serpentinite	36.23	0.39	4.07	17.29	0.18	28.24	1.27	0.25	0.04	0.04	11.60	ND	99.61
01-ERD-143A	Denmark/Rupert	OTH-013	Grab	Metapyroxenite	48.56	0.44	9.46	14.23	0.22	15.16	6.23	0.83	0.08	0.11	5.18	0.01	100.50
01-ERD-144A	Denmark/Rupert	OTH-013	Grab	Metagabbro	48.46	1.11	19.18	12.72	0.19	4.58	8.83	3.67	0.27	0.28	1.89	0.08	101.18
01-ERD-145A	Denmark/Rupert	OTH-013	Grab	Metapyroxenite	42.22	0.41	12.03	9.19	0.18	13.16	16.41	0.91	0.16	0.04	5.76	0.11	100.47
01-ERD-146A	Denmark/Rupert	OTH-013	Grab	Metamelagabbro	49.66	0.88	13.45	14.50	0.24	8.92	9.04	2.12	0.25	0.12	2.29	0.19	101.48
01-ERD-147A	Denmark/Rupert	OTH-013	Grab	Metagabbro-metamelagabbro	46.79	0.77	14.24	11.82	0.17	10.67	8.62	1.59	0.19	0.11	5.10	0.03	100.06
01-ERD-148A	Denmark/Rupert	OTH-013	Grab	Metagabbro	49.52	0.24	18.62	6.49	0.12	9.14	11.68	1.92	0.18	0.03	3.14	0.02	101.08
01-ERD-149A	Denmark/Rupert	OTH-013	Grab	Ol-gabbronorite/metapyroxenite	48.68	0.42	4.48	11.05	0.19	19.74	14.40	0.69	0.14	0.04	1.20	0.09	101.04
01-ERD-150A	Denmark/Rupert	OTH-013	Grab	Metagabbro	47.90	0.75	13.29	13.90	0.22	9.30	12.06	1.43	0.29	0.04	1.91	0.04	101.08
01-ERD-151A	Denmark/Rupert	OTH-013	Grab	Metamelagabbro to pyroxenite	47.63	1.20	13.86	16.36	0.18	6.10	10.45	1.54	0.15	0.09	3.51	0.03	101.08
01-ERD-152A	Denmark/Rupert	OTH-013	Grab	Metagabbro or hb-gabbro	48.16	1.09	14.13	15.74	0.24	6.57	10.51	1.83	0.29	0.08	2.66	0.09	101.30
01-ERD-153A	Denmark/Rupert	OTH-013	Grab	Pyroxene-hornblende-gabbro	47.54	1.97	13.08	20.89	0.31	5.09	9.28	2.52	0.34	0.10	0.14	0.12	101.26
01-ERD-154A	Denmark/Rupert	OTH-013	Grab	Metagabbro-leucogabbro	45.09	0.22	22.05	8.25	0.13	9.04	11.62	1.21	0.23	0.02	3.02	0.03	100.88
01-ERD-155A	Denmark/Rupert	OTH-013	Grab	Cannot be identified	60.98	0.65	16.17	6.66	0.10	2.74	5.57	3.94	0.99	0.15	2.78	0.09	100.73
01-ERD-156A	Denmark/Rupert	OTH-013	Grab	Olivine-melagabbronorite	37.18	0.19	5.62	17.12	0.22	27.71	4.16	0.34	0.03	ND	6.78	0.02	99.36
01-ERD-157A	Denmark/Rupert	OTH-013	Grab	Hb-gabbro or metagabbro	52.05	1.58	18.28	10.37	0.16	3.15	7.92	4.39	0.64	0.50	2.01	0.03	101.04

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-ERD-158A	Denmark/Rupert	OTH-013	Grab	Metagabbro	46.77	0.61	24.15	7.35	0.10	3.88	11.54	1.86	0.32	0.15	3.94	0.04	100.68
01-ERD-159A	Denmark/Rupert	OTH-013	Grab	Leucogabbro	60.93	0.65	16.26	6.60	0.10	2.71	5.83	3.89	1.09	0.15	2.55	0.07	100.75
01-CAM-050A	Kakagi Sills	OTH-014	Grab	Hornblende-gabbro	56.68	1.09	13.01	13.52	0.17	2.78	12.10	0.77	0.13	0.11	1.13	ND	101.49
01-CAM-051A	Kakagi Sills	OTH-014	Grab	Metamelagabbro	50.38	0.63	15.39	11.05	0.15	7.91	11.35	2.43	0.52	0.05	1.37	ND	101.24
01-CAM-052A	Kakagi Sills	OTH-014	Grab	Metagabbro	51.54	1.06	14.78	14.41	0.24	6.20	8.79	3.19	0.55	0.08	0.81	ND	101.65
01-CAM-053A	Kakagi Sills	OTH-014	Grab	Tonalite	50.73	0.63	16.34	10.82	0.17	7.16	10.52	3.53	0.35	0.04	0.96	ND	101.27
01-CAM-054A	Kakagi Sills	OTH-014	Grab	Metadiorite to metagabbro	50.23	1.21	14.43	9.44	0.12	4.86	6.67	4.67	0.79	0.16	7.02	0.06	99.60
01-CAM-055A	Kakagi Sills	OTH-014	Grab	Quartz-monzonite	52.25	1.40	14.07	16.67	0.23	3.99	8.22	3.05	0.27	0.11	1.08	0.15	101.34
01-CAM-056A	Kakagi Sills	OTH-014	Grab	Quartz-diorite to quartz-gabbro	53.46	1.29	13.64	17.06	0.24	4.30	7.07	2.75	0.32	0.10	1.40	0.02	101.63
01-CAM-057A	Kakagi Sills	OTH-014	Grab	Gabbro	47.66	0.37	16.56	8.38	0.15	8.77	11.04	2.04	0.52	0.03	3.55	0.01	99.07
01-CAM-058A	Kakagi Sills	OTH-014	Grab	Tonalite-gabbro	52.86	1.02	13.15	13.00	0.17	5.29	8.79	2.20	0.27	0.16	4.50	ND	101.41
01-CAM-059A	Kakagi Sills	OTH-014	Grab	Pyroxenite	48.56	0.21	10.00	10.01	0.18	17.61	9.37	0.95	0.20	0.01	3.28	ND	100.38
01-CAM-060A	Kakagi Sills	OTH-014	Grab	Plagioclase-bearing pyroxenite	49.36	0.27	12.37	9.47	0.17	14.47	10.45	1.05	0.12	0.01	2.70	ND	100.44
01-CAM-061A	Kakagi Sills	OTH-014	Grab	Hornblende-pyroxenite	46.48	0.31	7.78	12.35	0.23	20.48	7.82	0.65	0.09	0.02	3.83	ND	100.05
01-CAM-062A	Kakagi Sills	OTH-014	Grab	Lherzolite-metalherzolite	47.28	0.28	5.25	12.57	0.19	23.88	4.59	0.24	0.02	0.02	5.96	0.01	100.26
01-CAM-063A	Kakagi Sills	OTH-014	Grab	Metahornblende-pyroxenite	45.90	0.32	8.21	12.16	0.20	19.92	8.83	0.65	0.07	0.02	4.25	ND	100.54
01-CAM-064A	Kakagi Sills	OTH-014	Grab	Metahornblende-pyroxenite	48.39	0.35	10.22	10.84	0.19	16.30	9.72	1.17	0.14	0.02	3.47	ND	100.80
01-CAM-065A	Kakagi Sills	OTH-014	Grab	Metaleucogabbro	51.79	1.00	16.24	11.05	0.16	4.84	7.53	3.41	0.23	0.18	4.74	0.03	101.18
01-CAM-066A	Kakagi Sills	OTH-014	Grab	Meta hb-pyroxenite/pyroxenite	44.95	0.33	10.31	10.41	0.17	14.92	8.71	0.77	0.05	0.02	9.34	ND	99.98
01-ERD-121A	Kakagi Sills	OTH-014	Grab	Metapyroxenite	48.30	0.36	6.28	11.61	0.20	17.84	12.72	0.56	0.04	0.02	3.14	0.05	101.07
01-ERD-122A	Kakagi Sills	OTH-014	Grab	Metapyroxenite	45.81	0.41	6.99	13.21	0.21	19.17	9.74	0.34	0.07	0.02	4.76	0.03	100.74
01-ERD-123A	Kakagi Sills	OTH-014	Grab	Metagabbro	46.37	0.59	10.36	13.31	0.20	13.16	8.29	1.89	0.06	0.04	5.35	0.10	99.62
01-ERD-124A	Kakagi Sills	OTH-014	Grab	Metamelagabbro	47.77	0.54	9.73	12.76	0.22	14.32	10.24	1.54	0.16	0.03	3.22	0.01	100.53
01-ERD-125A	Kakagi Sills	OTH-014	Grab	Metapyroxenite	48.06	0.39	6.34	11.21	0.20	17.48	12.10	0.88	0.06	0.02	3.62	0.01	100.36
01-ERD-125B	Kakagi Sills	OTH-014	Grab	Metamelagabbro/pyroxenite bx	49.22	0.40	6.70	11.00	0.20	17.08	12.28	0.93	0.04	0.02	3.03	0.02	100.90
01-ERD-126A	Kakagi Sills	OTH-014	Grab	Metamelagabbro	49.10	0.31	14.24	9.24	0.17	10.92	13.46	0.70	0.04	0.01	2.63	0.08	100.82
01-ERD-126B	Kakagi Sills	OTH-014	Grab	Porphy. Metabasalt/andesite	65.25	0.40	14.77	4.52	0.06	3.47	3.68	6.20	0.35	0.08	1.59	ND	100.37
01-ERD-127A	Kakagi Sills	OTH-014	Grab	Metamelagabbro	47.36	0.63	15.98	13.00	0.22	8.00	10.43	1.27	0.10	0.04	3.68	0.03	100.71
01-ERD-129A	Kakagi Sills	OTH-014	Grab	Metamelagabbro to metagabbro	49.21	0.38	18.72	8.51	0.15	6.71	13.34	1.54	0.08	0.03	2.54	0.01	101.22
01-ERD-130A	Kakagi Sills	OTH-014	Grab	Metapyroxenite	45.58	0.41	7.29	13.28	0.23	19.69	9.59	0.60	0.14	0.03	3.74	0.08	100.58
01-ERD-131A	Kakagi Sills	OTH-014	Grab	Metagabbro	49.45	0.35	15.33	8.04	0.15	9.41	14.69	1.05	0.21	0.02	2.22	0.02	100.92
01-ERD-132A	Kakagi Sills	OTH-014	Grab	Metamelagabbro to metagabbro	50.23	0.32	15.29	8.16	0.16	9.60	13.81	1.02	0.12	0.02	2.55	0.02	101.28
01-ERD-133A	Kakagi Sills	OTH-014	Grab	Metagabbro	49.47	0.37	16.41	8.83	0.17	8.58	13.35	1.22	0.24	0.03	2.57	0.02	101.24
01-ERD-134A	Kakagi Sills	OTH-014	Grab	Calcite-quartz-chlorite schist	34.31	0.24	6.35	10.27	0.16	18.77	4.72	0.76	0.10	0.01	24.23	0.02	99.92
01-ERD-135A	Kakagi Sills	OTH-014	Grab	Meta-olivine-pyroxenite	43.03	0.21	4.81	12.25	0.19	25.42	3.99	0.15	0.34	0.01	10.20	0.02	100.60
01-RAS-053A	Kakagi Sills	OTH-014	Grab	Pyroxenite or websterite	48.34	0.39	6.78	11.59	0.19	17.55	11.01	0.98	0.07	0.02	3.86	0.03	100.78
01-RAS-054A	Kakagi Sills	OTH-014	Grab	Melagabbro-pyroxenite	46.53	0.40	6.30	11.91	0.20	18.72	10.21	0.22	0.04	0.02	6.02	0.01	100.57
01-RAS-055A	Kakagi Sills	OTH-014	Grab	Pyroxenite	45.51	0.41	6.98	13.37	0.22	19.96	8.99	0.28	0.05	0.03	5.01	0.01	100.81

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-RAS-056A	Kakagi Sills	OTH-014	Grab	Mesogabbro	47.04	0.60	10.58	13.20	0.17	12.40	7.38	1.55	0.08	0.04	7.32	0.02	100.36
01-RAS-057A	Kakagi Sills	OTH-014	Grab	Mesogabbro	45.80	0.42	7.03	13.10	0.21	19.34	9.60	0.56	0.16	0.03	4.35	0.04	100.60
01-RAS-058A	Kakagi Sills	OTH-014	Grab	Tonalite?	45.05	0.39	6.92	13.04	0.21	19.65	9.98	0.40	0.09	0.02	5.09	0.01	100.84
01-RAS-059A	Kakagi Sills	OTH-014	Grab	Mesogabbro	46.86	0.36	15.11	9.06	0.16	10.50	15.12	1.19	0.11	0.02	2.47	0.01	100.96
01-RAS-060A	Kakagi Sills	OTH-014	Grab	Mesogabbro	48.38	0.39	18.82	8.03	0.15	7.14	14.17	1.65	0.10	0.03	2.38	ND	101.24
01-RAS-061A	Kakagi Sills	OTH-014	Grab	Granite inclusion	74.59	0.23	12.58	3.06	0.07	0.18	1.61	5.06	2.10	0.03	0.46	ND	99.97
01-RAS-061B	Kakagi Sills	OTH-014	Grab	Tonalite	50.93	0.34	15.93	8.90	0.17	8.06	12.78	1.74	0.19	0.03	2.28	0.01	101.35
01-RAS-062A	Kakagi Sills	OTH-014	Grab	Mesogabbro	49.28	0.50	16.73	10.26	0.16	8.54	11.16	1.47	0.20	0.03	2.91	0.01	101.24
01-RAS-063A	Kakagi Sills	OTH-014	Grab	Mesogabbro	49.90	0.61	15.49	11.30	0.19	8.18	11.60	1.73	0.17	0.04	2.21	0.02	101.42
01-RAS-064A	Kakagi Sills	OTH-014	Grab	Quartz-gabbro to quartz-diorite	49.47	0.52	16.65	10.01	0.18	8.51	11.34	1.57	0.19	0.01	2.78	0.01	101.23
01-RAS-065A	Kakagi Sills	OTH-014	Grab	Mesogabbro	51.44	0.77	14.66	13.05	0.21	6.49	10.65	1.53	0.09	0.08	1.94	0.09	100.91
01-RAS-067A	Kakagi Sills	OTH-014	Grab	Mesogabbro	49.36	0.50	16.44	10.47	0.17	8.64	11.72	1.57	0.21	0.04	2.26	0.04	101.39
01-RAS-068A	Kakagi Sills	OTH-014	Grab	Mesogabbro	51.12	0.51	16.03	9.57	0.18	8.68	10.11	2.67	0.23	ND	2.27	0.01	101.37
01-RAS-069A	Kakagi Sills	OTH-014	Grab	Gabbroic chilled margin or basalt	53.94	0.86	16.37	8.01	0.15	5.21	7.85	5.92	0.32	0.26	1.44	0.01	100.33
01-RAS-070A	Kakagi Sills	OTH-014	Grab	Mesogabbro	49.83	0.50	17.20	9.88	0.17	8.24	11.00	1.86	0.15	0.03	2.34	0.02	101.21
01-RAS-071A	Kakagi Sills	OTH-014	Grab	Quartz-gabbro to quartz-diorite	51.39	0.70	15.03	11.72	0.17	7.59	9.81	1.71	0.46	0.05	2.68	0.03	101.31
01-RAS-072A	Kakagi Sills	OTH-014	Grab	Leucogabbro	44.49	0.50	13.53	11.03	0.15	10.85	7.91	2.49	0.52	0.04	8.79	0.02	100.30
01-RAS-073A	Kakagi Sills	OTH-014	Grab	Mesogabbro	49.16	0.54	15.85	10.23	0.17	8.54	9.83	1.85	0.80	0.02	3.30	ND	100.30
01-RAS-074A	Kakagi Sills	OTH-014	Grab	Wehrlite	40.50	0.30	6.20	13.96	0.18	28.18	3.27	0.20	0.15	0.02	7.17	0.02	100.12
01-RAS-075A	Kakagi Sills	OTH-014	Grab	Melagabbro	48.07	0.21	11.43	8.77	0.17	16.30	9.64	1.15	0.18	0.01	4.01	ND	99.93
01-RAS-076A	Kakagi Sills	OTH-014	Grab	Harzburgite	43.59	0.20	6.63	12.97	0.20	24.91	7.20	0.44	0.06	ND	4.61	0.01	100.83
01-RAS-077A	Kakagi Sills	OTH-014	Grab	Harzburgite	44.76	0.25	6.80	13.81	0.21	25.51	5.73	0.48	0.10	0.01	3.33	0.01	101.00
01-RAS-078A	Kakagi Sills	OTH-014	Grab	Pyroxenite	49.04	0.26	5.88	11.42	0.19	21.34	4.38	0.75	0.09	ND	7.44	0.03	100.81
01-RAS-079A	Kakagi Sills	OTH-014	Grab	Veined metagabbro altered	25.99	0.15	4.07	10.34	0.16	22.52	3.19	1.62	0.28	ND	31.19	0.01	99.49
01-RAS-080A	Kakagi Sills	OTH-014	Grab	Dunite-lherzolite	40.50	0.12	4.49	12.34	0.18	30.22	2.94	0.14	0.04	ND	9.19	0.01	100.17
01-CAM-067A	Pipestone Lake	OTH-015	Grab	Gabbro	47.80	1.02	15.33	13.28	0.20	7.79	10.31	2.01	0.21	0.07	3.03	0.04	101.05
01-CAM-068A	Pipestone Lake	OTH-015	Grab	Gabbro	47.74	0.91	16.67	12.40	0.17	6.69	10.94	2.42	0.06	0.07	3.27	0.01	101.34
01-CAM-069A	Pipestone Lake	OTH-015	Grab	Hornblende-gabbro	48.47	1.10	15.57	13.79	0.18	7.50	9.77	1.22	0.14	0.08	2.80	0.48	100.62
01-CAM-070A	Pipestone Lake	OTH-015	Grab	Hornblendite	46.02	1.64	14.01	17.62	0.21	6.10	9.86	1.73	0.07	0.07	4.02	0.08	101.35
01-CAM-071A	Pipestone Lake	OTH-015	Grab	Pyroxene-olivine-gabbro	41.47	0.57	13.59	14.60	0.21	15.52	7.22	1.04	0.13	0.01	5.89	0.01	100.25
01-CAM-072A	Pipestone Lake	OTH-015	Grab	Pyroxenite or melagabbro	44.81	0.96	15.88	14.00	0.19	8.43	9.66	1.73	0.03	0.06	5.65	0.01	101.40
01-CAM-073A	Pipestone Lake	OTH-015	Grab	Hornblende-gabbro	47.11	0.69	16.22	11.19	0.18	8.87	12.27	1.41	0.29	0.08	3.02	0.02	101.33
01-CAM-074A	Pipestone Lake	OTH-015	Grab	Hornblende-gabbro	46.48	1.16	14.60	13.55	0.20	5.79	7.49	3.39	0.04	0.08	8.69	0.02	101.47
01-CAM-075A	Pipestone Lake	OTH-015	Grab	Hornblende-gabbro	48.64	0.86	14.88	10.80	0.15	5.12	13.00	2.68	0.28	0.06	4.83	ND	101.30
01-CAM-076A	Pipestone Lake	OTH-015	Grab	Melagabbro/hornblende-gabbro	46.80	1.77	14.76	15.59	0.18	6.10	10.59	2.04	0.11	0.11	3.24	0.08	101.29
01-CAM-077A	Pipestone Lake	OTH-015	Grab	Gabbro?	51.57	0.76	14.71	12.25	0.24	7.35	9.18	1.86	0.40	0.07	3.06	0.07	101.45
01-CAM-077B	Pipestone Lake	OTH-015	Grab	Gabbro?	46.36	2.07	13.62	17.16	0.20	5.82	9.38	3.28	0.15	0.11	2.63	0.16	100.78
01-CAM-078A	Pipestone Lake	OTH-015	Grab	Olivine mesocumulate	38.38	0.17	3.94	11.75	0.12	31.76	1.36	0.03	ND	ND	11.98	ND	99.49

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-CAM-079A	Pipestone Lake	OTH-015	Grab	Diorite or gabbro	51.04	0.83	12.98	14.27	0.23	7.32	7.04	3.51	0.30	0.07	3.15	0.01	100.74
01-CAM-080A	Pipestone Lake	OTH-015	Grab	Diorite to hornblende-gabbro	53.12	0.76	14.11	12.20	0.19	6.07	9.44	2.47	0.07	0.05	2.81	ND	101.29
01-CAM-081A	Pipestone Lake	OTH-015	Grab	Diorite to hornblende-gabbro	52.75	0.61	14.45	11.25	0.20	7.78	7.76	2.95	1.02	0.05	2.38	0.01	101.20
01-CAM-082A	Pipestone Lake	OTH-015	Grab	Gabbro?	36.57	0.31	5.50	10.57	0.18	15.71	8.88	0.19	0.01	0.02	22.39	0.01	100.33
01-CAM-083A	Pipestone Lake	OTH-015	Grab	Gabbro to hornblende-gabbro	48.91	0.61	15.12	12.17	0.19	7.95	10.47	1.58	0.04	0.05	4.20	0.02	101.29
01-CAM-084A	Pipestone Lake	OTH-015	Grab	Chlorite-calcite schist	48.41	1.49	13.54	14.48	0.19	5.69	6.04	2.89	0.03	0.16	8.46	0.03	101.38
01-CAM-085A	Pipestone Lake	OTH-015	Grab	Olivine adcumulate	37.33	0.16	3.24	9.00	0.10	36.02	0.69	0.03	ND	ND	12.36	ND	98.93
01-CAM-086A	Pipestone Lake	OTH-015	Grab	Olivine adcumulate	38.52	0.08	1.73	8.56	0.08	38.05	0.28	0.02	ND	ND	12.00	0.01	99.30
01-CMV-051A	Pipestone Lake	OTH-015	Grab	Serpentinite	38.10	0.18	4.22	13.43	0.11	32.27	ND	0.02	ND	ND	10.60	0.01	98.92
01-CMV-051B	Pipestone Lake	OTH-015	Grab	Serpentinite	38.72	0.17	3.96	12.98	0.07	32.17	0.27	0.01	ND	ND	10.72	ND	99.08
01-CMV-051C	Pipestone Lake	OTH-015	Grab	Altered ultramafic	40.52	0.15	3.59	12.76	0.05	30.66	ND	0.01	ND	ND	11.22	ND	98.96
01-CMV-052A	Pipestone Lake	OTH-015	Grab	Calcite-chlorite-tremolite schist	40.88	0.18	13.80	6.28	0.14	8.59	12.97	0.99	1.27	0.02	15.07	ND	100.18
01-CMV-053A	Pipestone Lake	OTH-015	Grab	Talc schist	42.80	0.14	15.65	6.11	0.11	9.67	7.68	0.18	3.53	0.01	14.75	ND	100.65
01-CMV-053B	Pipestone Lake	OTH-015	Grab	Chlorite-carbonate schist	12.42	0.12	6.64	9.75	0.26	18.88	19.32	0.01	ND	ND	32.43	ND	99.82
01-CMV-054A	Pipestone Lake	OTH-015	Grab	Talc-chlorite schist	42.10	0.43	5.54	12.37	0.15	25.77	2.94	ND	ND	0.05	9.97	0.12	99.31
01-CMV-055A	Pipestone Lake	OTH-015	Grab	Metamelagabbro	50.19	0.83	14.38	12.36	0.18	7.04	9.24	2.93	0.86	0.06	2.25	ND	100.33
01-CMV-055B	Pipestone Lake	OTH-015	Grab	Metagabbro	52.48	0.94	14.39	13.75	0.19	5.46	7.58	4.35	0.60	0.09	1.44	ND	101.26
01-CMV-055C	Pipestone Lake	OTH-015	Grab	Metamelagabbro to metagabbro	41.23	1.06	17.91	18.05	0.22	8.83	6.88	1.76	0.94	0.11	4.42	ND	101.42
01-CMV-056A	Pipestone Lake	OTH-015	Grab	Chlorite-carbonate schist	47.62	0.26	13.56	10.61	0.16	13.41	4.92	0.47	ND	ND	9.59	ND	100.62
01-CMV-057A	Pipestone Lake	OTH-015	Grab	Deformed metagabbro	46.57	0.42	16.76	9.79	0.14	9.81	9.43	1.32	0.03	0.04	6.99	ND	101.30
01-RAS-081A	Pipestone Lake	OTH-015	Grab	Melamesogabbro	50.35	0.51	15.52	10.15	0.18	8.27	12.14	2.05	0.12	0.03	2.12	0.01	101.44
01-RAS-082A	Pipestone Lake	OTH-015	Grab	Mesogabbro	51.80	0.93	14.75	14.14	0.21	5.86	8.99	2.79	0.20	0.08	1.64	0.02	101.39
01-RAS-083A	Pipestone Lake	OTH-015	Grab	Mesogabbro	52.09	0.94	14.99	13.44	0.21	5.50	9.56	2.96	0.17	0.08	1.38	0.05	101.32
01-RAS-084A	Pipestone Lake	OTH-015	Grab	Metamesogabbro	50.58	0.87	14.91	14.13	0.22	6.62	9.25	1.69	0.06	0.07	2.75	0.03	101.15
01-RAS-085A	Pipestone Lake	OTH-015	Grab	Mesogabbro-leucogabbro	53.35	1.00	13.99	11.49	0.18	5.46	9.85	3.60	0.21	0.06	1.19	ND	100.38
01-RAS-086A	Pipestone Lake	OTH-015	Grab	Leucogabbro	46.31	0.33	18.84	8.01	0.13	8.40	13.02	1.72	0.10	0.03	3.03	0.01	99.92
01-RAS-087A	Pipestone Lake	OTH-015	Grab	Lherzolite	36.81	0.15	4.11	11.98	0.13	30.38	0.74	0.01	ND	0.01	15.70	0.01	100.01
01-RAS-088A	Pipestone Lake	OTH-015	Grab	Leucogabbro-mesogabbro	46.80	0.22	14.06	9.32	0.17	14.26	5.35	3.87	0.01	0.01	6.00	ND	100.07
01-RAS-089A	Pipestone Lake	OTH-015	Grab	Gabbro?	35.44	0.43	10.50	13.97	0.17	24.09	3.51	0.02	ND	0.03	11.31	ND	99.47
01-RAS-090A	Pipestone Lake	OTH-015	Grab	Quartz-gabbro	46.05	0.77	13.71	12.69	0.20	6.94	8.14	2.46	0.27	0.06	10.04	0.02	101.33
01-RAS-091A	Pipestone Lake	OTH-015	Grab	Hornblende-leucogabbro	42.20	0.44	13.35	7.18	0.10	7.14	9.43	3.64	0.56	0.01	16.21	0.02	100.26
01-RAS-092A	Pipestone Lake	OTH-015	Grab	Quartz-gabbro	51.86	1.00	14.27	14.01	0.20	5.09	8.63	2.31	0.26	0.08	3.87	ND	101.58
01-RAS-093A	Pipestone Lake	OTH-015	Grab	Leucogabbro	50.07	0.84	15.01	13.62	0.16	7.56	8.19	1.30	0.08	0.07	4.85	ND	101.75
01-RAS-094A	Pipestone Lake	OTH-015	Grab	Quartz-metagabbro	49.45	1.09	13.00	14.32	0.20	4.51	7.01	2.51	0.01	0.10	8.79	0.05	100.98
01-RAS-095A	Pipestone Lake	OTH-015	Grab	Meta-andesite or qz-metagabbro	48.55	0.78	14.09	14.67	0.18	6.23	7.72	1.20	0.03	0.07	6.83	0.92	100.35
01-RAS-096A	Pipestone Lake	OTH-015	Grab	Quartz-gabbro	48.53	0.46	15.06	11.06	0.19	5.97	10.08	1.50	0.02	0.05	7.79	0.03	100.72
01-RAS-097A	Pipestone Lake	OTH-015	Grab	Quartz-gabbro	50.64	0.67	16.48	12.17	0.21	5.30	10.73	2.06	0.05	0.06	2.81	0.03	101.16
01-RAS-098A	Pipestone Lake	OTH-015	Grab	Quartz-gabbro?	48.63	2.78	12.73	20.04	0.27	4.01	4.97	3.29	0.03	0.17	3.74	0.26	100.66

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-RAS-099A	Pipestone Lake	OTH-015	Grab	Hornblendite-metagabbro	47.17	1.15	13.51	16.60	0.27	8.32	11.27	1.18	0.68	0.06	0.48	0.55	100.69
01-RAS-099B	Pipestone Lake	OTH-015	Grab	Metapyroxenite-hornblendite	47.59	1.23	14.15	15.54	0.26	8.05	10.79	1.59	0.91	0.07	0.85	0.05	101.03
01-CAM-039A	Caliper Lake	OTH-016	Grab	Granite	62.89	0.45	18.48	4.91	0.07	1.79	5.30	5.32	0.98	0.11	1.06	0.04	101.37
01-CAM-040A	Caliper Lake	OTH-016	Grab	Quartz-rich granite	68.73	0.36	16.22	2.98	0.04	1.12	3.82	5.05	1.09	0.08	0.77	0.01	100.26
01-CAM-041A	Caliper Lake	OTH-016	Grab	Quartz-monzonite	52.23	0.93	18.09	9.64	0.12	4.02	7.45	4.91	1.37	0.57	1.23	0.06	100.56
01-CAM-042A	Caliper Lake	OTH-016	Grab	Monzonite	45.13	1.13	19.09	12.60	0.11	4.63	8.95	3.99	1.50	1.23	2.05	0.12	100.40
01-CAM-043A	Caliper Lake	OTH-016	Grab	Pyroxene-hornblendite	50.40	0.49	6.55	7.85	0.14	14.78	17.28	1.29	0.67	0.14	1.85	ND	101.44
01-CAM-044A	Caliper Lake	OTH-016	Grab	Hornblende-pyroxenite	49.13	0.63	7.86	9.05	0.17	12.88	17.00	1.91	0.60	0.13	1.46	0.01	100.83
01-CAM-045A	Caliper Lake	OTH-016	Grab	Monzodiorite	45.97	0.72	19.14	11.89	0.12	3.45	10.18	4.48	0.89	0.82	1.69	0.21	99.34
01-CAM-046A	Caliper Lake	OTH-016	Grab	Monzodiorite	48.21	0.97	15.60	12.74	0.16	7.01	9.47	3.75	0.54	0.05	1.50	0.16	100.00
01-CAM-047A	Caliper Lake	OTH-016	Grab	Hornblende-pyroxenite	47.51	0.46	5.16	10.30	0.18	16.45	16.43	0.88	0.37	0.10	1.42	0.02	99.25
01-CAM-048A	Caliper Lake	OTH-016	Grab	Pyroxene-hornblendite	45.14	0.82	7.90	13.01	0.20	15.29	13.75	1.19	0.60	0.19	1.67	0.03	99.76
01-CAM-049A	Caliper Lake	OTH-016	Grab	Hornblende-pyroxenite	44.88	0.65	6.68	9.02	0.14	20.58	14.26	0.72	0.39	0.10	3.20	0.08	100.62
01-CMV-049A	Dobie Intrusion	OTH-017	Grab	Metapyroxenite	49.01	0.31	6.37	13.03	0.20	17.22	11.19	0.81	0.10	ND	2.39	0.03	100.64
01-CMV-049B	Dobie Intrusion	OTH-017	Grab	Diabase	49.91	1.19	14.21	13.73	0.22	6.72	11.43	2.15	0.33	0.08	1.29	0.13	101.26
01-CMV-049D	Dobie Intrusion	OTH-017	Grab	Hornblende-gabbro to diorite	53.46	0.77	19.66	8.16	0.09	3.60	8.06	3.59	1.23	0.29	1.72	0.02	100.63
01-CMV-050A	Dobie Intrusion	OTH-017	Grab	Hornblende-gabbro to diorite	51.44	0.28	20.87	9.70	0.12	4.63	8.67	3.63	0.68	0.10	0.84	ND	100.97
01-CMV-058A	Lash-Carpenter	OTH-018	Grab	Gabbronorite	49.76	0.19	23.18	4.93	0.08	5.36	13.71	2.12	0.39	0.03	1.13	0.01	100.87
01-CMV-059A	Lash-Carpenter	OTH-018	Grab	Metagabbro	48.59	0.19	23.32	5.61	0.10	5.32	13.92	1.93	0.52	0.03	1.47	0.03	100.99
01-CMV-060A	Lash-Carpenter	OTH-018	Grab	Gabbronorite	56.62	0.44	17.73	7.07	0.11	4.75	7.84	3.55	1.45	0.09	0.96	ND	100.61
01-CMV-060B	Lash-Carpenter	OTH-018	Grab	Gabbro	55.83	0.66	17.93	6.16	0.10	3.95	6.69	4.14	3.05	0.31	1.48	ND	100.30
01-CMV-061A	Lash-Carpenter	OTH-018	Grab	Monzonite	69.58	0.33	15.22	3.50	0.05	0.76	2.30	4.13	3.72	0.08	0.71	ND	100.39
01-CMV-062A	Lash-Carpenter	OTH-018	Grab	Gabbronorite	50.88	0.72	16.85	11.66	0.18	6.93	10.28	3.01	0.34	0.08	0.28	0.02	101.22
01-CMV-063A	Lash-Carpenter	OTH-018	Grab	Metagabbro	51.30	0.20	18.72	6.24	0.12	8.43	12.49	2.16	0.30	0.02	1.23	0.01	101.21
01-CMV-063B	Lash-Carpenter	OTH-018	Grab	Gabbronorite	50.93	0.24	18.59	6.45	0.12	8.27	11.78	2.14	0.33	0.04	0.84	0.02	99.72
01-CMV-064A	Lash-Carpenter	OTH-018	Grab	Metagabbro	50.34	0.23	18.60	5.83	0.12	7.78	11.88	2.26	1.03	0.03	2.33	0.03	100.42
01-CMV-064B	Lash-Carpenter	OTH-018	Grab	Metamelagabbro	46.73	0.64	11.13	9.26	0.17	15.79	10.74	1.60	0.30	0.48	2.99	0.27	99.83
01-CMV-065A	Lash-Carpenter	OTH-018	Grab	Hornblende-gabbro	51.02	0.23	17.28	6.84	0.13	8.70	12.42	2.08	0.37	0.03	1.74	0.04	100.84
01-CMV-065B	Lash-Carpenter	OTH-018	Grab	Hornblende-gabbro	51.77	0.27	19.14	5.97	0.10	6.82	12.02	2.55	0.52	0.11	1.35	0.04	100.60
01-CAM-087A	Grassy Portage	OTH-019	Grab	Diorite or gabbro	59.27	1.44	11.68	16.51	0.25	2.03	6.99	2.82	0.18	0.25	0.35	ND	101.77
01-CAM-088A	Grassy Portage	OTH-019	Grab	Melagabbro to gabbro	52.96	0.74	14.72	15.16	0.26	4.89	9.15	3.14	0.18	0.09	0.55	ND	101.84
01-CAM-089A	Grassy Portage	OTH-019	Grab	Melagabbro	50.15	1.09	13.88	16.17	0.25	6.23	10.64	1.86	0.14	0.07	0.45	0.05	100.93
01-CAM-090A	Grassy Portage	OTH-019	Grab	Melagabbro to hornblendite	48.81	1.22	14.53	17.48	0.25	6.36	10.11	2.04	0.30	0.09	0.45	0.02	101.64
01-CAM-091A	Grassy Portage	OTH-019	Grab	Diorite to hornblende-gabbro	56.19	0.99	15.60	7.98	0.24	4.82	11.17	2.61	0.15	0.22	0.79	0.02	100.76
01-CAM-092A	Grassy Portage	OTH-019	Grab	Gabbro to leucogabbro	48.84	0.60	25.80	6.09	0.07	2.08	11.88	3.25	0.48	0.01	1.82	0.04	100.92
01-CAM-093A	Grassy Portage	OTH-019	Grab	Leucogabbro	47.42	0.41	24.62	8.59	0.12	4.18	12.70	2.12	0.34	0.03	0.84	0.06	101.37
01-CAM-094A	Grassy Portage	OTH-019	Grab	Melagabbro to gabbro	59.36	1.29	12.17	19.03	0.44	1.19	6.23	1.68	0.20	0.59	ND	0.02	102.00
01-CAM-095A	Grassy Portage	OTH-019	Grab	Gabbro	62.48	0.76	10.98	14.67	0.26	2.29	6.13	3.00	0.35	0.11	0.17	0.20	101.20

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-ERD-179A	Grassy Portage	OTH-019	Grab	Staurolite-chloritoid-garnet schist	47.64	1.73	32.62	8.87	0.11	0.86	1.19	3.28	1.55	0.02	2.71	0.22	100.58
01-ERD-180A	Grassy Portage	OTH-019	Grab	Metagabbro-hb metagabbro	51.04	0.96	16.08	13.62	0.22	5.74	10.08	2.87	0.26	0.06	0.53	0.03	101.46
01-ERD-181A	Grassy Portage	OTH-019	Grab	Metamelagabbro or hb-gabbro	47.22	0.51	16.82	12.02	0.17	9.27	9.97	2.29	0.51	0.01	1.92	0.02	100.74
01-ERD-182A	Grassy Portage	OTH-019	Grab	Metagabbro	46.77	0.57	18.01	12.92	0.22	6.88	11.23	1.96	0.96	0.02	1.84	0.07	101.37
01-ERD-183A	Grassy Portage	OTH-019	Grab	Metagabbro to hb-gabbro	48.68	0.61	17.42	12.84	0.18	6.71	10.23	2.15	1.12	ND	1.30	0.01	101.25
01-RAS-100A	Grassy Portage	OTH-019	Grab	Metahornblende gabbro	51.82	0.48	14.17	13.42	0.22	7.05	10.75	2.07	0.33	0.05	0.69	0.01	101.05
01-RAS-100B	Grassy Portage	OTH-019	Grab	Anorthosite gabbro	48.38	0.73	22.32	8.22	0.12	3.34	12.08	2.64	0.32	0.03	0.89	0.09	99.07
01-RAS-101A	Grassy Portage	OTH-019	Grab	Meta-anorthositic gabbro	48.38	1.88	15.66	14.78	0.22	5.12	10.38	2.67	0.29	0.08	0.76	0.07	100.22
01-RAS-102A	Grassy Portage	OTH-019	Grab	Meta-anorthositic gabbro	50.56	0.74	18.92	11.66	0.17	4.69	10.87	2.77	0.39	0.04	0.68	0.02	101.49
01-RAS-103A	Grassy Portage	OTH-019	Grab	Metamesogabbro	46.46	1.04	17.93	13.08	0.15	3.94	12.32	2.70	0.27	0.04	2.87	0.06	100.80
01-RAS-104A	Grassy Portage	OTH-019	Grab	Metamesogabbro	48.79	1.19	18.79	12.82	0.15	4.45	9.24	4.01	0.51	0.10	0.84	0.32	100.89
01-RAS-105A	Grassy Portage	OTH-019	Grab	Meta-anorthositic gabbro	49.71	0.54	19.18	10.74	0.14	4.58	10.51	3.28	0.54	0.04	0.74	0.01	100.00
01-RAS-106A	Grassy Portage	OTH-019	Grab	Metamesogabbro	47.84	1.53	15.47	14.23	0.21	7.92	10.78	1.63	0.31	0.14	0.64	0.36	100.70
01-RAS-106B	Grassy Portage	OTH-019	Grab	Cannot be identified	46.60	0.38	10.16	29.95	0.05	1.29	2.54	1.63	0.42	0.07	7.99	10.90	101.08
01-RAS-107A	Grassy Portage	OTH-019	Grab	Metamesogabbro	47.63	1.20	16.71	15.33	0.14	5.65	10.09	2.95	0.35	0.16	0.81	0.62	101.02
01-RAS-108A	Grassy Portage	OTH-019	Grab	Metamesogabbro	48.99	1.27	14.87	12.11	0.15	8.73	9.41	3.18	0.71	0.08	1.20	0.02	100.70
01-RAS-109A	Grassy Portage	OTH-019	Grab	Megacrys. meta-anorth. gabbro	48.91	0.35	22.62	8.57	0.10	4.03	11.07	2.91	0.47	0.01	1.98	0.06	101.02
01-RAS-110A	Grassy Portage	OTH-019	Grab	Meta-anorthositic gabbro	49.95	0.68	20.50	10.31	0.11	3.42	10.76	3.59	0.59	0.01	1.03	ND	100.95
01-ERD-160A	Bad Vermilion	OTH-020	Grab	Metagabbro	49.72	0.85	15.24	11.54	0.18	7.94	11.71	1.52	0.20	0.06	1.88	0.09	100.84
01-ERD-161A	Bad Vermilion	OTH-020	Grab	Metagabbro	49.02	0.83	15.25	11.36	0.17	8.26	11.50	1.95	0.34	0.05	1.70	0.01	100.45
01-ERD-162A	Bad Vermilion	OTH-020	Grab	Metagabbro	55.46	0.56	14.03	9.64	0.15	7.08	9.21	1.82	0.12	0.06	2.68	0.02	100.82
01-ERD-163A	Bad Vermilion	OTH-020	Grab	Metagabbro	53.45	1.58	13.15	14.38	0.19	4.43	8.04	1.15	0.43	0.13	4.07	0.01	100.98
01-ERD-164A	Bad Vermilion	OTH-020	Grab	Metagabbro	48.62	1.03	14.19	12.63	0.18	7.43	8.73	2.44	0.18	0.08	5.56	0.04	101.06
01-ERD-165A	Bad Vermilion	OTH-020	Grab	Metagabbro	47.99	0.78	16.21	11.98	0.18	8.60	10.47	1.46	0.19	0.06	3.09	0.07	101.01
01-ERD-166A	Bad Vermilion	OTH-020	Grab	Metagabbro	50.38	0.53	14.05	9.52	0.17	6.67	8.54	3.55	0.12	0.07	7.58	0.01	101.18
01-ERD-167A	Bad Vermilion	OTH-020	Grab	Metagabbro	51.75	0.86	14.25	12.48	0.18	5.95	9.60	1.52	0.55	0.09	3.95	0.04	101.18
01-ERD-168A	Bad Vermilion	OTH-020	Grab	Metagabbro	52.19	0.92	14.49	12.14	0.15	5.55	7.89	1.47	0.64	0.09	5.40	0.10	100.94
01-ERD-169A	Bad Vermilion	OTH-020	Grab	Cannot be identified	34.37	0.24	6.36	10.27	0.16	18.76	4.72	0.75	0.10	0.02	24.31	0.01	100.06
01-ERD-170A	Bad Vermilion	OTH-020	Grab	Metagabbro	42.86	0.21	4.84	12.26	0.19	25.24	3.91	0.14	0.35	0.01	10.36	0.01	100.37
01-ERD-171A	Bad Vermilion	OTH-020	Grab	Metagabbro	50.12	0.27	16.88	7.79	0.15	9.69	12.38	1.33	0.15	0.03	1.76	0.10	100.55
01-ERD-172A	Bad Vermilion	OTH-020	Grab	Leucometagabbro/gabbro	54.19	1.08	15.50	8.38	0.11	4.87	6.34	5.13	1.09	0.17	3.88	ND	100.74
01-ERD-173A	Bad Vermilion	OTH-020	Grab	Metagabbro	48.28	0.81	15.65	12.19	0.20	6.57	10.88	1.74	0.23	0.06	4.58	0.02	101.17
01-ERD-174A	Bad Vermilion	OTH-020	Grab	Metagabbro or hb-gabbro	52.93	1.09	14.74	14.04	0.18	4.15	8.51	3.25	0.11	0.14	1.96	0.01	101.11
01-ERD-175A	Bad Vermilion	OTH-020	Grab	Hb-gabbro or metagabbro	52.39	0.58	14.70	9.95	0.17	7.16	9.48	2.95	0.25	0.06	2.85	0.01	100.53
01-ERD-176A	Bad Vermilion	OTH-020	Grab	Metasediment	63.26	0.66	11.46	8.60	0.07	1.84	7.25	2.09	0.97	0.13	4.45	0.05	100.78
01-ERD-177A	Bad Vermilion	OTH-020	Grab	Cannot be identified	45.72	0.47	17.43	9.31	0.14	8.38	11.41	1.02	0.36	0.03	6.62	0.02	100.90
01-ERD-178A	Bad Vermilion	OTH-020	Grab	Metagabbro	49.13	0.89	15.50	11.78	0.18	7.93	11.25	1.56	0.12	0.07	2.74	0.01	101.16
01-ERD-184A	Mountdew Lake	OTH-021	Grab	Metamelagabbro	47.95	1.06	13.09	13.37	0.20	9.84	10.78	1.74	0.16	0.11	2.92	0.06	101.20

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.01%	S %	Total %
01-ERD-185A	Mountdew Lake	OHB-021	Grab	Metagabbro	45.62	4.92	11.82	19.31	0.31	4.69	7.86	2.18	0.49	0.18	2.51	1.29	99.98
01-ERD-185B	Mountdew Lake	OHB-021	Grab	Lamprophyre dike?	63.06	0.42	15.79	3.69	0.06	1.74	3.52	7.36	1.73	0.16	1.31	0.07	98.84
01-ERD-186A	Mountdew Lake	OHB-021	Grab	Quartz metagabbro	50.09	2.85	13.05	18.10	0.25	3.56	6.47	2.05	0.28	0.25	2.22	0.05	100.18
01-ERD-187A	Mountdew Lake	OHB-021	Grab	Cannot be identified	50.78	0.85	13.91	9.18	0.17	4.36	7.43	4.51	3.72	0.43	4.63	0.04	99.95
01-ERD-188A	Mountdew Lake	OHB-021	Grab	Metapyroxenite	48.68	0.75	11.60	12.13	0.21	11.33	11.18	1.36	0.28	0.06	2.95	0.04	100.53
01-MAB-011A	Nabob Lake	OHB-022	Grab	Hb-metagabbro to amphibolite	43.25	1.63	15.08	18.19	0.16	7.77	11.98	1.16	0.30	ND	1.06	0.09	100.62
01-MAB-012A	Nabob Lake	OHB-022	Grab	Leucogabbro	48.46	0.33	24.42	6.01	0.10	5.24	12.76	1.96	0.23	0.07	1.59	0.03	101.14
01-MAB-012B	Nabob Lake	OHB-022	Grab	Metagabbro	47.75	0.39	13.27	11.04	0.18	13.97	9.31	1.05	0.21	0.04	3.05	0.07	100.24
01-MAB-013A	Nabob Lake	OHB-022	Grab	Metagabbro	47.03	0.31	15.23	9.06	0.15	13.67	10.53	1.23	0.21	0.02	2.85	0.02	100.32
01-MAB-014A	Nabob Lake	OHB-022	Grab	Dunite	36.10	0.36	2.73	17.70	0.20	32.67	2.02	0.01	ND	0.05	4.24	0.04	96.47
01-MAB-015A	Nabob Lake	OHB-022	Grab	Pyroxenite	39.44	0.16	13.33	11.72	0.16	19.38	8.50	0.43	0.31	0.02	6.51	0.11	99.95
01-MAB-016A	Nabob Lake	OHB-022	Grab	Metagabbro	47.13	0.36	17.46	12.04	0.15	9.30	9.88	1.15	0.20	ND	2.60	1.00	100.30
01-MAB-017A	Nabob Lake	OHB-022	Grab	Metapyroxenite	43.62	0.26	12.58	12.47	0.17	16.82	9.42	0.64	0.14	0.02	4.06	0.04	100.19
01-MAB-018A	Pike Lake	OHB-023	Grab	Int. to felsic metavolcanic	71.66	0.32	12.15	6.98	0.05	1.92	1.70	2.60	2.10	0.02	1.14	0.10	100.66
01-MAB-019A	Pike Lake	OHB-023	Grab	Metagabbro or metadiorite	56.64	1.01	15.29	9.75	0.13	3.09	7.87	2.81	0.79	0.14	1.63	0.06	101.17
01-MAB-019B	Pike Lake	OHB-023	Grab	Feldspar quartz porphyry	69.47	0.28	16.12	2.92	0.03	0.86	3.30	5.01	1.16	0.07	1.44	0.01	100.67
01-MAB-020A	Pike Lake	OHB-023	Grab	Metagabbro	51.99	0.31	19.67	6.48	0.10	6.78	9.11	2.19	1.05	0.07	3.52	0.01	101.27
01-MAB-021A	Pike Lake	OHB-023	Grab	Metagabbro	49.94	0.70	18.39	8.98	0.12	5.40	10.23	2.69	0.62	0.09	2.90	0.01	101.06
01-MAB-021B	Pike Lake	OHB-023	Grab	Metagabbro	54.20	0.97	17.04	11.80	0.12	3.69	7.47	2.58	0.82	0.21	2.44	0.02	101.35
01-MAB-021C	Pike Lake	OHB-023	Grab	Metagabbro	49.80	0.72	14.95	10.91	0.16	5.19	9.36	1.96	0.33	0.14	7.63	0.06	101.30
01-MAB-021D	Pike Lake	OHB-023	Grab	Metagabbro	50.19	1.15	17.49	12.41	0.12	3.58	8.17	2.91	0.56	0.90	3.47	0.04	101.95
01-MAB-021E	Pike Lake	OHB-023	Grab	Metagabbro	48.78	0.28	21.63	7.33	0.10	6.05	9.88	2.63	0.44	0.04	3.56	0.01	100.73
01-MAB-022A	Pike Lake	OHB-023	Grab	Metamelagabbro	43.07	2.95	13.47	21.75	0.21	6.34	9.57	2.06	0.39	0.06	0.93	0.01	100.81
01-MAB-023A	Pike Lake	OHB-023	Grab	Metavolcanic	61.46	0.36	11.84	15.59	0.65	2.33	4.92	1.05	0.56	0.08	2.08	0.06	101.13
01-MAB-024A	Pike Lake	OHB-023	Grab	Metamelagabbro	43.74	3.00	13.96	18.29	0.22	6.18	9.44	2.30	0.48	0.11	1.05	0.26	100.76
01-RAN-141A	Pike Lake	OHB-023	Grab	Quartz-diorite	72.29	0.43	11.92	7.21	0.03	1.08	1.43	3.52	1.92	0.08	0.95	ND	100.88
01-RAN-141B	Pike Lake	OHB-023	Grab	Tonalite?	74.33	0.35	12.60	4.97	0.03	1.16	1.10	3.64	1.96	0.04	0.61	ND	100.90
01-RAN-142A	Pike Lake	OHB-023	Grab	Diorite	49.82	1.27	16.90	13.18	0.14	3.96	9.22	3.12	0.52	0.59	2.06	0.07	100.79
01-RAN-143A	Pike Lake	OHB-023	Grab	Metagabbro	50.64	0.53	16.81	9.57	0.17	8.63	9.71	1.80	0.54	0.08	2.93	0.02	101.36
01-RAN-144A	Pike Lake	OHB-023	Grab	Quartz-diorite	57.39	0.46	17.82	6.67	0.10	4.88	7.76	3.12	0.90	0.09	1.74	0.07	100.95
01-RAN-145A	Pike Lake	OHB-023	Grab	Quartz diorite to leucogabbro	51.95	0.35	20.26	5.94	0.09	6.33	7.33	2.15	2.05	0.06	4.01	0.01	100.54
01-RAN-146A	Pike Lake	OHB-023	Grab	Quartz diorite to quartz gabbro	53.42	0.64	17.03	6.63	0.14	5.42	8.87	3.60	0.77	0.05	2.17	0.02	100.73
01-ERD-236A	Cobb Sturgeon	OHB-024	Grab	Metapyroxenite to metagabbro	47.73	0.94	15.58	13.94	0.22	7.31	10.80	1.81	0.13	0.07	2.73	0.05	101.26
01-ERD-237A	Cobb Sturgeon	OHB-024	Grab	Metamelagabbro	48.66	1.09	15.61	14.08	0.23	7.03	10.89	1.82	0.21	0.06	1.43	0.12	101.13
01-ERD-238A	Cobb Sturgeon	OHB-024	Grab	Metamelagabbro/pyroxenite	48.74	1.34	14.82	15.05	0.24	6.80	10.48	2.39	0.23	0.11	1.18	0.00	101.37
GWS-99-24	Handcuff Lake	OHB-025	Grab	Metagabbro	49.60	0.92	13.81	16.15	0.26	8.88	8.40	2.14	0.22	0.20	1.19	0.05	101.76
GWS-99-25	Handcuff Lake	OHB-025	Grab	Metagabbro	46.01	0.95	22.92	10.84	0.10	4.34	12.80	2.09	0.12	0.02	0.98	0.00	101.23
GWS-99-26	Handcuff Lake	OHB-025	Grab	Metagabbro	44.51	1.63	18.96	15.67	0.15	5.80	11.69	1.90	0.06	0.02	0.74	0.12	101.34

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	total wt
GMS-99-27	Handcuff Lake	03BB-025	Grab	Leucogabbro	49.09	0.31	25.48	3.13	0.08	3.88	13.29	2.02	0.12	0.04	0.90	ND	100.33
GMS-99-28	Handcuff Lake	03BB-025	Grab	Mesogabbro	48.51	0.24	23.35	6.06	0.09	5.31	12.72	2.07	0.30	0.02	2.02	0.04	100.89
GMS-99-29	Handcuff Lake	03BB-025	Grab	Melagabbro	44.09	0.92	21.10	11.00	0.12	5.51	12.92	1.91	0.17	0.02	1.32	0.10	99.61
GMS-99-30	Handcuff Lake	03BB-025	Grab	Mesogabbro	48.97	0.26	20.06	7.09	0.13	7.50	12.68	1.67	0.30	0.02	1.31	0.01	100.38
GMS-99-31	Handcuff Lake	03BB-025	Grab	Melagabbro	46.41	1.77	16.26	13.92	0.19	6.50	11.13	2.21	0.14	0.12	0.74	0.13	100.39
GMS-99-32	Handcuff Lake	03BB-025	Grab	Melagabbro	47.43	1.46	14.74	14.18	0.16	5.54	10.16	2.61	0.10	0.04	0.72	0.09	100.32
GMS-99-33	Handcuff Lake	03BB-025	Grab	Melagabbro	47.24	0.96	20.03	11.84	0.13	5.16	11.50	2.35	0.27	0.05	1.32	0.06	100.89
GMS-99-34	Handcuff Lake	03BB-025	Grab	Mesogabbro	51.12	1.53	19.87	10.26	0.14	3.73	6.65	3.05	0.26	0.47	0.87	0.02	100.06
P-00-010	Samuels Lake	03BB-026	Grab	Diorite	58.82	0.46	19.58	5.21	0.08	1.75	4.41	5.22	2.91	0.34	1.36	0.25	100.02
P-00-015	Samuels Lake	03BB-026	Grab	Diorite	53.98	0.58	18.86	7.21	0.06	3.23	3.50	6.45	2.69	0.54	3.32	1.00	100.21
P-99-D-088	Samuels Lake	03BB-026	Core	Clinopyroxenite	48.83	0.33	6.48	10.06	0.16	17.97	12.41	1.04	0.55	0.10	2.40	0.14	100.55
P-99-D-095	Samuels Lake	03BB-026	Core	Wehrlite	37.70	0.15	2.27	17.91	0.15	27.43	5.36	0.37	0.24	0.05	7.88	3.04	99.67
P-99-D-099	Samuels Lake	03BB-026	Core	Wehrlite	32.47	0.12	1.52	27.20	0.14	21.90	6.45	0.17	0.12	0.02	7.69	8.45	97.80
P-99-D-101	Samuels Lake	03BB-026	Core	Clinopyroxenite	39.65	0.18	2.57	14.05	0.16	26.36	7.53	0.12	0.02	0.05	8.01	1.26	99.91
P-99-156	Samuels Lake	03BB-026	Grab	Hornblendite	39.64	1.92	15.33	15.48	0.14	12.29	10.13	2.08	1.20	0.04	3.26	0.22	99.49
P-00-058	McQuat Stream	03BB-027	Grab	Clinopyroxenite	42.19	0.28	5.31	14.14	0.19	20.84	8.91	0.46	0.17	0.04	7.64	0.42	100.10
P-99-089	Nym Bergman	03BB-028	Grab	Hornblendite	46.98	0.24	4.20	11.15	0.16	21.65	12.23	0.72	0.24	0.04	2.08	0.49	100.20
P-99-030	Nickelbee Fine L.	03BB-029	Grab	Wehrlite	40.26	0.21	3.53	14.86	0.19	26.20	5.07	0.37	0.11	0.03	6.13	0.02	99.01
P-99-008	Eva Lake	03BB-030	Grab	Clinopyroxenite	51.57	0.30	4.56	9.16	0.16	20.05	13.05	0.64	0.26	0.06	1.03	0.00	100.73
P-99-113	Kawene Lake	03BB-031	Grab	Clinopyroxenite	46.13	0.22	5.33	10.07	0.16	24.00	12.48	0.62	0.15	0.05	5.11	0.01	100.02
P-99-114	Kawene Lake	03BB-031	Grab	Clinopyroxenite	45.09	0.25	4.04	10.05	0.15	22.50	12.34	0.58	0.51	0.06	4.72	0.12	100.09
P-99-117	Kawene Lake	03BB-031	Grab	Clinopyroxenite	47.36	0.65	10.46	10.41	0.15	15.27	11.38	2.13	1.26	0.16	1.78	0.07	99.28
P-99-122	Kawene Lake	03BB-031	Grab	Clinopyroxenite	46.50	0.46	7.05	10.07	0.16	18.41	13.42	1.22	0.60	0.06	2.62	0.20	100.58
P-99-053	Abram Lake	03BB-033	Grab	Clinopyroxenite	49.63	0.27	3.91	10.71	0.16	17.05	16.86	0.58	0.21	0.05	0.74	1.00	100.26
P-99-054	Abram Lake	03BB-033	Grab	Hornblendite	50.90	0.24	4.48	11.30	0.18	18.00	13.40	0.62	0.26	0.03	1.18	0.40	100.50
P-99-027	Mud Lake	03BB-034	Grab	Hornblendite	43.63	1.24	11.56	12.76	0.15	15.49	12.26	1.62	1.02	0.07	1.60	0.12	99.69
P-99-028	Mud Lake	03BB-034	Grab	Clinopyroxenite	46.61	0.37	7.62	12.47	0.19	15.93	12.50	1.02	0.80	0.11	2.37	0.17	100.50
P-99-060	North Elbow Lake	03BB-035	Grab	Olivine websterite	48.05	0.37	7.27	10.17	0.18	17.92	14.55	0.81	0.42	0.05	1.27	0.24	100.02
P-99-064	North Elbow Lake	03BB-035	Grab	Clinopyroxenite	49.95	0.48	5.33	11.34	0.20	16.83	14.92	0.83	0.44	0.03	0.69	0.47	100.30
P-99-174	South Elbow Lake	03BB-035	Grab	Gabbro	49.70	0.76	15.52	9.55	0.16	7.11	7.35	4.12	1.59	0.41	3.08	0.06	99.93
00-CMW-005A	Shebandowan Mine	03BB-036	Grab	Peridotite or dunite	42.73	0.41	8.81	14.52	0.14	18.26	8.80	0.44	0.05	0.02	4.63	0.73	99.96
00-CMW-005B	Shebandowan Mine	03BB-036	Grab	Peridotite	41.16	0.45	9.27	12.48	0.17	18.54	10.64	0.84	0.07	0.05	3.22	0.16	99.77
00-CMW-006A	Shebandowan Mine	03BB-036	Grab	Peridotite or pyroxenite	42.76	0.64	10.39	17.04	0.17	15.14	7.75	0.92	0.22	0.03	3.64	1.00	99.68
00-CMW-007A	Shebandowan Mine	03BB-036	Grab	Wehrlite to dunite	37.96	0.25	3.63	15.14	0.19	29.72	4.41	0.05	0.03	0.02	8.54	0.06	100.03
00-CMW-008A	Shebandowan Mine	03BB-036	Grab	Wehrlite to dunite	36.97	0.25	3.09	15.33	0.20	32.04	2.72	0.04	0.04	0.01	8.47	0.03	99.12
00-CMW-009A	Shebandowan Mine	03BB-036	Grab	Dunite	32.67	0.06	0.90	18.03	0.11	33.47	0.45	ND	ND	ND	10.47	3.93	99.65
00-CMW-010A	Shebandowan Mine	03BB-036	Grab	Melagabbro	49.78	1.36	13.81	14.57	0.18	6.69	6.59	3.63	0.24	0.12	3.90	0.02	101.32
00-CMW-011A	Shebandowan Mine	03BB-036	Grab	Melagabbro	50.90	1.23	13.04	13.69	0.19	4.93	9.09	2.09	0.26	0.13	3.61	0.03	101.12

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	S	TOTAL
				(Detection Limit-->)	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.05%	0.01%	
01-CMV-112A	Shebandowan Mine	OTH-036	Grab	Metagabbro	49.79	0.88	14.95	12.02	0.16	8.56	5.80	2.39	0.07	0.08	6.79	0.01	101.49
01-ARR-001A	Haines Gabbro	OTH-037	Grab	Metabasalt	50.36	1.64	14.47	14.75	0.21	5.78	8.47	1.51	0.13	0.18	3.82	0.09	101.32
01-ARR-002A	Haines Gabbro	OTH-037	Grab	Metagabbro	48.47	0.94	14.53	10.69	0.15	8.38	11.03	2.43	0.20	0.10	4.39	0.04	101.31
01-ARR-003A	Haines Gabbro	OTH-037	Grab	Metagabbro	50.42	0.92	14.34	11.60	0.20	6.55	11.42	1.49	0.09	0.09	4.06	0.08	101.18
01-ARR-004A	Haines Gabbro	OTH-037	Grab	Metapyroxenite/melagabbro	36.54	0.33	4.90	10.07	0.14	19.56	5.57	0.36	ND	0.01	22.27	0.01	99.75
01-ARR-005A	Haines Gabbro	OTH-037	Grab	Metagabbro	48.09	0.99	13.92	11.13	0.16	8.62	11.45	2.06	0.42	0.10	2.40	0.02	99.34
01-ARR-006A	Haines Gabbro	OTH-037	Grab	Metagabbro	50.05	1.11	13.82	13.90	0.21	7.30	9.66	2.66	0.14	0.08	2.38	0.03	101.31
01-ARR-007A	Haines Gabbro	OTH-037	Grab	Metagabbro	47.12	0.60	19.35	7.71	0.13	7.42	11.46	3.24	0.05	0.08	3.40	0.01	100.56
01-ARR-008A	Haines Gabbro	OTH-037	Grab	Metagabbro to metamelagabbro	50.66	1.35	13.49	15.30	0.22	5.99	9.06	2.52	0.07	0.11	2.53	0.02	101.30
01-ARR-009A	Haines Gabbro	OTH-037	Grab	Metagabbro	47.84	0.29	13.82	9.96	0.21	9.83	10.70	1.14	0.02	0.01	6.92	0.01	100.74
01-ARR-010A	Haines Gabbro	OTH-037	Grab	Anorthositic gabbro	46.84	0.30	18.35	7.69	0.16	5.99	11.78	1.45	0.05	0.02	8.01	0.01	100.64
01-ARR-011A	Haines Gabbro	OTH-037	Grab	Metagabbro	46.79	0.60	19.65	8.48	0.14	6.97	10.42	2.89	1.36	0.04	3.47	0.02	100.81
01-ARR-012A	Haines Gabbro	OTH-037	Grab	Metamelagabbro	47.47	2.07	14.03	15.87	0.24	6.08	9.65	1.35	0.41	0.21	3.43	0.26	100.81
01-ARR-013A	Haines Gabbro	OTH-037	Grab	Meta-anorthosite	45.02	0.14	27.42	3.00	0.04	2.96	12.32	2.87	2.01	0.01	4.62	0.19	100.41
01-ARR-014A	Haines Gabbro	OTH-037	Grab	Metaleucogabbro	47.42	0.12	23.82	4.40	0.12	6.42	9.71	2.73	1.97	0.01	4.00	0.05	100.72
01-ARR-015A	Haines Gabbro	OTH-037	Grab	Metavolcanic	56.07	0.20	19.97	4.28	0.07	4.13	7.17	4.19	0.90	0.01	2.98	0.05	99.97
01-ARR-016A	Haines Gabbro	OTH-037	Grab	Metagabbro	50.96	0.20	18.29	6.53	0.10	10.01	9.05	1.47	0.89	0.04	3.91	0.01	101.45
01-ARR-016B	Haines Gabbro	OTH-037	Grab	Meta-anorthosite	42.87	0.33	25.38	10.02	0.11	4.19	10.05	2.10	1.31	0.03	3.61	1.32	100.00
01-MAH-031A	Crystal Lake	OTH-038	Grab	Gabbro to olivine-gabbro	49.13	3.66	14.61	15.88	0.18	4.24	7.44	3.46	1.29	0.37	0.49	0.04	100.76
01-MAH-032A	Crystal Lake	OTH-038	Grab	Gabbro to olivine-gabbro	48.37	1.87	16.99	11.84	0.17	6.30	10.88	2.75	0.60	0.18	1.07	0.02	101.01
01-MAH-033A	Crystal Lake	OTH-038	Grab	Ol-gabbro to ol-gabbronorite	44.46	1.18	16.56	12.42	0.16	12.02	10.02	2.11	0.28	0.11	0.80	0.05	100.12
01-MAH-034A	Crystal Lake	OTH-038	Grab	Gabbro	49.78	1.76	16.56	12.72	0.17	5.26	9.24	2.83	0.84	0.25	1.69	0.04	101.11
01-MAH-035A	Crystal Lake	OTH-038	Grab	Felsic metavolcanic	73.69	0.45	11.05	4.80	0.03	1.36	1.13	2.68	1.57	0.09	2.96	0.01	99.80
01-MAH-036A	Crystal Lake	OTH-038	Grab	Olivine-gabbro	46.06	1.01	19.38	10.73	0.14	8.57	9.86	2.58	0.48	0.11	1.08	0.03	100.01
01-MAH-036B	Crystal Lake	OTH-038	Grab	Olivine-gabbro to gabbro	49.23	3.45	14.52	16.36	0.18	4.46	7.39	3.41	1.29	0.35	0.30	0.03	100.95
01-MAH-037A	Crystal Lake	OTH-038	Grab	Olivine-gabbro to troctolite	43.94	0.67	18.44	11.46	0.14	10.41	9.30	2.17	0.60	0.07	1.55	0.02	98.74
01-MAH-038A	Crystal Lake	OTH-038	Grab	Gabbro	49.99	0.98	19.20	7.15	0.11	5.73	12.01	2.58	1.32	0.08	1.31	0.03	100.45
01-MAH-039A	Crystal Lake	OTH-038	Grab	Olivine-gabbro/leucotroctolite	46.20	0.72	23.07	7.89	0.10	6.46	10.74	2.11	1.04	0.09	2.52	0.06	100.94
01-MAH-040A	Crystal Lake	OTH-038	Grab	Gabbronorite to gabbro	47.82	1.67	16.64	13.72	0.19	6.95	9.83	2.47	0.63	0.16	1.30	0.04	101.39
01-GRD-003A	Hele Township	OTH-039	Grab	Websterite to lherzolite	42.24	1.18	6.03	16.02	0.26	22.64	6.83	0.36	1.08	0.10	3.36	0.03	100.10
01-GRD-004A	Hele Township	OTH-039	Grab	Wehrlite	42.41	1.20	5.51	16.12	0.26	22.70	7.26	0.63	0.58	0.11	3.42	0.03	100.20
01-GRD-005A	Hele Township	OTH-039	Grab	Wehrlite to mela-olivine-gabbro	37.31	0.90	4.47	16.87	0.26	26.72	3.72	0.23	0.44	0.06	8.48	0.03	99.46
01-GRD-006A	Hele Township	OTH-039	Grab	Wehrlite	36.95	0.67	3.58	15.51	0.24	29.59	3.21	0.07	0.42	0.08	9.30	0.01	99.62
01-GRD-007A	Hele Township	OTH-039	Grab	Ol-gabbro to pg-bearing wehrlite	43.27	1.26	4.72	15.72	0.25	24.26	7.72	0.51	0.58	0.12	2.35	0.01	100.76
01-GRD-008A	Hele Township	OTH-039	Grab	Clinopyroxenite	46.18	1.33	5.60	13.61	0.14	17.99	11.47	0.37	1.47	0.10	2.35	0.02	100.61
01-GRD-009A	Hele Township	OTH-039	Grab	Melagabbro	46.37	1.59	6.73	11.60	0.18	13.89	13.63	1.23	0.93	0.13	2.60	0.01	98.88
01-GRD-010A	Hele Township	OTH-039	Grab	Pg-cpyroxenite to melagabbro	46.68	1.57	6.88	13.10	0.20	14.72	13.18	0.89	1.07	0.14	2.27	0.02	100.70
01-GRD-011A	Hele Township	OTH-039	Grab	Gabbro to olivine-gabbro	49.38	1.19	14.98	14.25	0.22	7.47	10.62	2.13	0.53	0.11	0.71	0.02	101.59

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-GRD-012A	Hele Township	OTH-039	Grab	Gabbro	48.26	2.05	8.71	11.51	0.17	11.59	11.00	2.85	1.09	0.20	3.10	0.01	100.53
01-RAS-333A	Seagull/Wolf Mou.	OTH-040	Core	Quartz-gabbro	55.24	1.99	14.46	7.94	0.04	3.00	6.05	5.61	0.89	0.61	4.34	0.08	100.16
01-RAS-334A	Seagull/Wolf Mou.	OTH-040	Core	Mesogabbro	43.99	5.20	12.44	16.22	0.14	5.86	8.55	2.94	1.52	0.25	2.60	0.32	99.69
01-RAS-335A	Seagull/Wolf Mou.	OTH-040	Core	Olivine-websterite	43.00	0.62	2.63	12.21	0.20	23.86	10.29	0.38	0.40	0.05	5.78	0.08	99.42
01-RAS-336A	Seagull/Wolf Mou.	OTH-040	Core	Olivine-websterite	43.06	0.58	2.47	11.33	0.16	25.45	9.70	0.23	0.84	0.06	6.06	0.06	99.96
01-RAS-337A	Seagull/Wolf Mou.	OTH-040	Core	Olivine-websterite	46.08	0.60	2.00	11.10	0.18	22.59	14.34	0.28	0.20	0.03	3.04	0.04	100.44
01-RAS-338A	Seagull/Wolf Mou.	OTH-040	Core	Dunite	33.99	0.70	2.34	15.84	0.17	29.81	1.89	0.06	0.59	0.03	12.45	0.21	97.89
01-RAS-339A	Seagull/Wolf Mou.	OTH-040	Core	Lherzolite	33.45	0.53	1.50	17.16	0.21	30.45	1.12	0.05	0.33	0.05	13.17	0.24	98.02
01-RAS-340A	Seagull/Wolf Mou.	OTH-040	Core	Lherzolite-wehrlite	42.44	0.42	1.33	12.01	0.20	24.88	10.90	0.13	0.04	ND	8.10	0.17	100.48
01-RAS-341A	Seagull/Wolf Mou.	OTH-040	Core	Olivine-gabbro	49.44	1.58	14.93	14.90	0.21	5.44	9.99	2.88	0.75	0.17	0.50	0.03	100.79
01-RAS-342A	Seagull/Wolf Mou.	OTH-040	Core	Olivine-gabbro	47.95	1.14	17.09	13.63	0.18	7.58	9.81	2.51	0.36	0.12	0.33	0.02	100.71
01-RAS-343A	Seagull/Wolf Mou.	OTH-040	Core	Olivine-websterite	44.65	0.42	1.34	10.36	0.15	24.65	13.04	0.20	0.05	ND	5.53	0.04	100.40
01-RAS-344A	Seagull/Wolf Mou.	OTH-040	Core	Wehrlite-dunite	38.44	0.53	1.72	13.10	0.20	27.61	6.34	0.10	0.49	0.04	10.14	0.22	98.69
01-RAS-345A	Seagull/Wolf Mou.	OTH-040	Core	Dunite	32.62	0.40	1.29	16.19	0.22	31.78	1.02	0.04	0.42	0.04	13.80	0.36	97.83
01-RAS-346A	Seagull/Wolf Mou.	OTH-040	Core	Dunite	32.40	0.41	1.25	15.17	0.21	31.95	1.37	0.06	0.44	0.04	14.72	0.07	98.02
01-RAS-347A	Seagull/Wolf Mou.	OTH-040	Core	Wehrlite-dunite	32.47	0.39	1.23	15.11	0.20	32.45	1.27	0.08	0.38	0.04	14.51	0.04	98.12
01-RAS-348A	Seagull/Wolf Mou.	OTH-040	Core	Dunite	34.71	0.43	1.52	15.46	0.20	34.65	1.04	0.07	0.59	0.04	9.39	0.03	98.12
01-RAS-349A	Seagull/Wolf Mou.	OTH-040	Core	Dunite-wehrlite	36.68	0.49	1.78	16.48	0.22	36.32	1.21	0.09	0.62	0.05	3.94	0.04	97.87
01-RAS-350A	Seagull/Wolf Mou.	OTH-040	Core	Dunite	37.27	0.44	1.71	16.67	0.21	37.36	1.17	0.08	0.64	0.05	2.77	0.09	98.39
01-RAS-351A	Seagull/Wolf Mou.	OTH-040	Core	Lherzolite	38.13	0.62	2.39	17.49	0.23	35.70	1.78	0.34	0.89	0.07	0.57	0.18	98.20
01-RAS-352A	Seagull/Wolf Mou.	OTH-040	Core	Lherzolite	38.05	0.59	2.73	15.44	0.22	34.82	2.64	0.49	0.48	0.08	3.14	0.04	98.68
01-RAS-353A	Seagull/Wolf Mou.	OTH-040	Core	Olivine-melagabbro	38.84	1.00	3.68	15.38	0.22	28.23	4.00	0.32	0.70	0.11	6.47	0.11	98.96
01-RAS-354A	Seagull/Wolf Mou.	OTH-040	Core	Olivine-gabbro	39.52	1.12	4.34	15.64	0.26	25.14	4.36	0.52	0.94	0.16	6.76	0.20	98.77
01-RAS-355A	Seagull/Wolf Mou.	OTH-040	Core	Wehrlite	39.23	1.09	3.99	15.04	0.22	26.05	5.13	0.52	0.78	0.10	6.26	0.36	98.42
01-RAS-356A	Seagull/Wolf Mou.	OTH-040	Core	Olivine-gabbro	40.10	1.41	5.18	15.18	0.27	23.92	5.01	0.59	0.96	0.14	4.52	1.78	97.26
01-RAS-357A	Seagull/Wolf Mou.	OTH-040	Core	Mesogabbro	45.72	3.19	10.83	17.94	0.22	7.62	10.44	2.22	1.34	0.19	0.62	0.24	100.32
01-RAS-358A	Seagull/Wolf Mou.	OTH-040	Core	Melagabbro	48.05	2.15	9.63	13.84	0.21	10.06	9.34	2.17	1.48	0.26	1.79	0.05	98.97
01-RAS-359A	Seagull/Wolf Mou.	OTH-040	Core	Melagabbro	48.46	2.12	9.23	14.02	0.22	9.81	11.00	2.15	1.70	0.22	1.83	0.11	100.78
01-RAS-360A	Seagull/Wolf Mou.	OTH-040	Core	Olivine-clinopyroxenite	48.34	0.97	3.45	10.64	0.19	19.24	15.04	0.48	0.53	0.07	1.52	0.03	100.49
01-RAS-361A	Seagull/Wolf Mou.	OTH-040	Core	Dunite-wehrlite	35.63	0.72	1.87	16.44	0.24	28.66	2.16	0.08	0.64	0.04	11.67	0.13	98.14
01-RAS-362A	Seagull/Wolf Mou.	OTH-040	Core	Dunite	34.28	0.50	1.67	15.62	0.20	30.92	0.77	0.03	0.57	0.04	13.25	0.16	97.86
01-RAS-363A	Seagull/Wolf Mou.	OTH-040	Core	Dunite	34.99	0.62	1.84	16.13	0.18	31.24	1.55	0.07	0.46	ND	11.06	0.08	98.14
01-RAS-364A	Seagull/Wolf Mou.	OTH-040	Core	Dunite	35.54	0.60	2.07	15.22	0.17	31.58	1.29	0.08	0.68	0.07	10.65	0.20	97.96
01-RAS-365A	Seagull/Wolf Mou.	OTH-040	Core	Wehrlite	35.44	0.55	2.09	15.87	0.22	31.20	1.60	0.06	0.71	ND	10.85	0.20	98.59
01-RAS-366A	Seagull/Wolf Mou.	OTH-040	Core	Lherzolite	35.63	0.71	2.32	15.76	0.21	30.63	2.01	0.10	0.94	0.11	9.93	0.14	98.37
01-RAS-367A	Seagull/Wolf Mou.	OTH-040	Core	Lherzolite	36.53	0.75	2.60	15.94	0.22	29.96	2.42	0.19	1.02	0.12	8.80	0.15	98.56
01-RAS-368A	Seagull/Wolf Mou.	OTH-040	Core	Wehrlite	38.24	1.23	4.54	15.80	0.22	27.36	2.68	0.15	1.36	0.12	6.38	0.31	98.10
01-CMV-131A	Buck Lake	OTH-041	Grab	Pg-cpyroxenite to metagabbro	48.15	0.31	6.88	8.46	0.13	21.34	11.93	0.96	0.36	0.07	2.00	0.06	100.59

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	S	TOTAL
				(Detection Limit-->)	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.05%	0.01%	
01-CMV-132A	Buck Lake	OTH-041	Grab	Tonalite or trondhjemite	75.01	0.06	13.96	0.73	ND	0.21	1.85	5.83	1.02	ND	0.45	0.14	99.13
01-CMV-133A	Buck Lake	OTH-041	Grab	Metamelagabbro/pyroxenite	48.52	0.48	11.40	10.39	0.17	14.14	9.90	2.06	1.25	0.17	1.46	0.14	99.93
01-CMV-134A	Buck Lake	OTH-041	Grab	Hb-leucogabbro/metaleucogabbro	48.88	0.51	20.96	6.29	0.08	6.14	11.03	3.53	0.87	0.07	2.39	0.04	100.76
01-CMV-135A	Buck Lake	OTH-041	Grab	Metamelagabbro	45.49	1.11	14.23	11.72	0.16	11.20	11.10	2.23	0.79	0.10	1.83	0.12	99.96
01-CMV-136A	Buck Lake	OTH-041	Grab	Metaleucogabbro	46.78	0.84	22.26	7.33	0.08	4.12	11.09	3.53	0.87	0.06	2.18	0.29	99.15
01-CMV-137A	Buck Lake	OTH-041	Grab	Melagabbro	45.31	0.34	13.37	11.23	0.19	14.06	10.90	1.67	0.61	0.12	2.43	0.13	100.24
01-CMV-138A	Buck Lake	OTH-041	Grab	Metamelagabbro	45.47	0.67	14.00	11.51	0.17	12.25	11.84	1.96	0.55	0.17	1.30	0.16	99.89
01-CMV-139A	Buck Lake	OTH-041	Grab	Metapyroxenite	46.79	0.33	6.95	11.37	0.14	15.86	13.92	0.73	0.41	0.06	1.74	1.86	98.30
01-CMV-140A	Buck Lake	OTH-041	Grab	Metapyroxenite/melagabbro	46.97	0.42	8.31	13.06	0.17	13.78	13.08	0.83	0.59	0.05	2.43	1.96	99.67
01-RAS-316A	Tib Lake	OTH-042	Core	Clinopyroxenite	50.41	0.13	5.62	14.70	0.21	23.17	3.21	0.47	0.17	ND	0.90	0.97	98.99
01-RAS-317A	Tib Lake	OTH-042	Core	Gabbronorite-pyroxenite	50.48	0.23	6.10	11.84	0.19	20.52	7.59	0.63	0.23	ND	1.23	0.04	99.07
01-RAS-318A	Tib Lake	OTH-042	Core	Gabbronorite	51.37	0.21	6.85	11.08	0.19	22.00	7.18	0.65	0.14	ND	1.14	0.02	100.82
01-RAS-319A	Tib Lake	OTH-042	Core	Gabbronorite-metagabbro	54.87	0.41	6.93	13.31	0.21	15.25	5.22	1.33	0.62	0.06	1.36	0.17	99.57
01-RAS-320A	Tib Lake	OTH-042	Core	Mesogabbro	52.81	0.25	10.82	11.10	0.17	11.82	8.29	1.57	0.92	0.01	1.98	0.47	99.74
01-RAS-321A	Tib Lake	OTH-042	Core	Lherzolite	40.24	0.21	3.14	12.76	0.16	28.84	5.59	0.27	0.07	ND	7.34	0.08	98.62
01-RAS-322A	Tib Lake	OTH-042	Core	Mesogabbro	49.02	0.19	19.87	5.74	0.11	8.89	12.59	1.59	0.70	0.04	1.94	0.07	100.69
01-RAS-323A	Tib Lake	OTH-042	Core	Gabbro to gabbronorite	37.96	0.09	7.86	14.12	0.18	24.37	6.62	0.23	0.05	ND	8.19	0.08	99.68
01-RAS-324A	Tib Lake	OTH-042	Core	Pyroxenite	48.74	0.24	6.35	14.64	0.24	19.51	5.52	0.40	0.10	0.01	3.04	0.15	98.80
01-RAS-325A	Tib Lake	OTH-042	Core	Websterite	50.40	0.19	6.65	13.01	0.21	21.77	6.18	0.54	0.17	ND	0.61	0.26	99.72
01-RAS-326A	Tib Lake	OTH-042	Core	Mesogabbro	50.24	0.28	19.78	7.25	0.12	6.32	11.69	2.82	0.30	0.04	0.90	0.15	99.75
01-RAS-327A	Tib Lake	OTH-042	Core	Mesogabbro	50.68	0.30	16.76	9.15	0.16	8.81	11.40	2.26	0.24	0.03	0.90	0.16	100.68
01-RAS-328A	Tib Lake	OTH-042	Core	Pyroxenite to gabbro	49.84	0.22	16.08	8.46	0.16	9.94	11.60	1.62	0.60	0.03	1.71	0.07	100.27
01-RAS-329A	Tib Lake	OTH-042	Core	Mesogabbro	47.13	0.28	14.85	8.11	0.14	11.59	14.21	1.00	0.43	0.02	2.46	0.04	100.23
01-RAS-330A	Tib Lake	OTH-042	Core	Mesogabbro	50.48	0.40	16.10	8.90	0.16	8.36	12.03	2.23	0.26	0.04	1.16	0.08	100.11
01-RAS-331A	Tib Lake	OTH-042	Grab	Mesogabbro	47.73	0.78	17.77	13.43	0.14	6.83	10.84	2.50	0.20	ND	0.77	0.20	100.99
01-RAS-332A	Tib Lake	OTH-042	Grab	Olivine-websterite	46.71	0.20	4.58	9.41	0.17	22.21	14.32	0.38	0.01	ND	2.43	0.02	100.42
01-RAS-147A	Ruffo Lake West	OTH-043	Grab	Mesogabbro	50.02	0.92	12.44	11.42	0.21	9.67	11.25	2.46	0.48	0.09	2.05	0.03	101.00
01-RAS-148A	Ruffo Lake West	OTH-043	Grab	Quartz-gabbro	47.48	0.47	15.37	9.21	0.16	9.87	12.71	1.17	0.05	0.03	4.10	0.05	100.62
01-RAS-149A	Ruffo Lake West	OTH-043	Grab	Metamesogabbro	46.87	0.45	14.19	9.83	0.18	11.33	12.66	1.62	0.05	0.03	3.23	0.08	100.43
01-RAS-150A	Ruffo Lake West	OTH-043	Grab	Metamesogabbro	49.18	0.38	15.51	8.16	0.17	9.64	13.38	1.56	0.08	0.03	3.12	0.04	101.21
01-RAS-151A	Ruffo Lake West	OTH-043	Grab	Metamesogabbro	46.29	0.55	13.95	9.64	0.17	10.42	14.50	1.40	0.05	0.04	3.43	0.04	100.43
01-RAS-152A	Ruffo Lake West	OTH-043	Grab	Mesogabbro	48.05	0.64	10.49	10.27	0.17	13.12	13.21	1.12	0.04	0.04	3.40	0.13	100.54
01-RAS-153A	Ruffo Lake East	OTH-043	Grab	Melagabbro	47.28	0.49	10.89	9.08	0.17	12.22	16.96	0.89	0.03	0.03	2.26	0.02	100.29
01-RAS-154A	Ruffo Lake East	OTH-043	Grab	Melagabbro	47.36	0.44	11.01	9.09	0.17	12.29	13.91	1.79	0.14	0.02	2.75	ND	98.98
01-RAS-155A	Ruffo Lake East	OTH-043	Grab	Mesomelagabbro	47.92	0.58	11.88	10.32	0.17	11.58	15.58	0.90	0.08	0.06	2.25	0.01	101.33
01-RAS-155B1	Ruffo Lake East	OTH-043	Grab	Pyroxenite	48.76	1.16	7.46	13.17	0.20	12.87	12.96	1.54	0.14	0.12	2.11	0.22	100.49
01-RAS-155B2	Ruffo Lake East	OTH-043	Grab	Melamesogabbro-pyroxenite	48.54	1.24	8.27	13.37	0.20	12.98	11.38	1.68	0.11	0.10	2.50	0.17	100.38
01-RAS-156A	Ruffo Lake East	OTH-043	Grab	Metamesogabbro	46.56	0.66	13.67	10.71	0.18	10.37	13.58	1.59	0.10	0.06	3.02	0.03	100.49

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-RAS-157A	Ruffo Lake East	OTH-043	Grab	Mesogabbro	45.96	0.40	14.78	9.28	0.16	11.61	13.65	1.27	0.07	0.02	4.03	0.01	101.24
01-RAS-158A	Ruffo Lake East	OTH-043	Grab	Mesogabbro	45.30	0.41	14.34	7.95	0.15	9.47	17.49	1.12	0.10	0.02	2.19	0.01	98.54
01-RAS-159A	Ruffo Lake East	OTH-043	Grab	Mesogabbro	48.66	0.75	13.29	10.52	0.18	9.98	12.97	1.67	0.22	0.05	2.70	0.02	101.00
01-RAS-160A	Ruffo Lake East	OTH-043	Grab	Mesogabbro	47.74	1.38	14.33	15.88	0.20	7.08	9.63	1.67	0.19	0.14	3.17	0.02	101.42
01-RAS-161A	Ruffo Lake East	OTH-043	Grab	Mesogabbro	45.52	1.68	15.44	17.28	0.22	7.39	6.38	3.25	0.44	0.17	3.67	0.01	101.45
01-CMV-094A	Roaring/Allely L.	OTH-044	Grab	Granodiorite	71.44	0.20	15.22	1.66	0.03	0.75	2.35	4.27	3.66	0.06	0.88	ND	100.52
01-CMV-095A	Roaring/Allely L.	OTH-044	Grab	Monzogranite	73.12	0.13	14.03	1.88	0.02	0.47	2.43	4.24	3.45	0.04	0.80	ND	100.60
01-CMV-096A	Roaring/Allely L.	OTH-044	Grab	Metagabbro	43.07	0.88	18.58	12.84	0.18	6.55	9.26	2.92	1.70	1.21	3.18	0.27	100.37
01-CMV-096B	Roaring/Allely L.	OTH-044	Grab	Oxide-apatite-pyroxenite	47.66	0.81	16.92	12.16	0.19	5.83	9.16	3.39	1.32	1.00	2.20	0.32	100.63
01-CMV-097A	Roaring/Allely L.	OTH-044	Grab	Gabbronorite	51.04	0.28	8.17	9.07	0.19	14.24	14.39	1.51	0.27	0.18	1.69	0.03	101.03
01-CMV-098A	Roaring/Allely L.	OTH-044	Grab	Gabbronorite	48.68	0.32	21.99	6.09	0.09	5.38	12.07	3.09	0.38	0.25	1.66	0.33	100.02
01-CMV-098B1	Roaring/Allely L.	OTH-044	Grab	Gabbronorite	47.57	0.25	14.88	6.47	0.12	9.48	17.22	1.39	0.74	0.04	1.96	0.13	100.12
01-CMV-098B2	Roaring/Allely L.	OTH-044	Grab	Gabbronorite	47.84	0.28	13.44	7.81	0.14	9.67	16.45	1.50	0.65	0.04	1.74	0.57	99.57
01-CMV-098C	Roaring/Allely L.	OTH-044	Grab	Olivine-gabbronorite	47.59	0.33	8.57	8.85	0.16	15.27	15.65	0.98	0.48	0.24	2.26	0.07	100.37
01-CMV-099A	Roaring/Allely L.	OTH-044	Grab	Gabbronorite	48.35	0.37	8.53	9.47	0.19	12.22	17.42	1.35	0.38	0.37	1.77	0.10	100.41
01-CMV-100A	Roaring/Allely L.	OTH-044	Grab	Gabbronorite	48.08	0.32	16.12	8.27	0.17	8.54	13.16	1.61	1.13	0.06	2.77	0.09	100.22
01-CMV-101A	Roaring/Allely L.	OTH-044	Grab	Olivine-gabbronorite	47.25	0.48	14.07	9.85	0.17	8.89	14.92	1.78	0.70	0.14	2.16	0.26	100.41
01-CMV-103A	Roaring/Allely L.	OTH-044	Grab	Leucogabbronorite	49.88	0.26	21.55	5.41	0.09	5.15	12.04	3.04	0.61	0.09	1.68	0.18	99.80
01-CMV-104A	Roaring/Allely L.	OTH-044	Grab	Monzogabbro	61.98	0.59	15.62	4.49	0.07	2.94	4.60	4.87	3.74	0.31	0.62	ND	99.84
01-CMV-146A	Roaring/Allely L.	OTH-044	Grab	Monzogabbro	49.38	0.66	16.44	9.92	0.14	7.73	10.00	2.81	1.01	0.38	1.51	0.81	99.99
01-MAH-027A	Roaring/Allely L.	OTH-044	Grab	Metagabbro/hornblende gabbro	44.62	1.51	16.03	17.56	0.18	6.09	10.84	2.66	0.60	0.02	0.78	0.35	100.89
01-MAH-028A	Roaring/Allely L.	OTH-044	Grab	Granodiorite to tonalite	66.10	0.36	16.71	4.38	0.06	1.26	4.79	4.71	0.74	0.08	0.99	0.01	100.17
01-MAH-029A	Roaring/Allely L.	OTH-044	Grab	Granite to granodiorite	68.77	0.33	16.43	3.26	0.04	0.91	4.52	4.91	0.75	0.06	0.49	0.01	100.48
01-MAH-030A	Roaring/Allely L.	OTH-044	Grab	Quartz-monzonite	52.28	1.27	15.64	14.27	0.29	3.44	6.87	4.28	1.35	0.47	0.72	0.02	100.88
01-CMV-093A	Logan Sills	OTH-045	Grab	Diabase	49.95	1.20	14.72	14.34	0.23	6.91	10.82	2.39	0.48	0.10	0.33	0.02	101.47
01-CMV-102A	Logan Sills	OTH-045	Grab	Diabase	49.60	1.44	14.87	14.93	0.23	6.31	9.97	2.42	0.60	0.13	0.67	0.04	101.18
01-MAH-025A	Empire Lake	OTH-046	Grab	Granite to granodiorite	73.47	0.14	14.17	1.34	0.03	0.26	0.90	3.72	5.40	0.03	0.69	ND	100.15
01-MAH-026A	Empire Lake	OTH-046	Grab	Granodiorite gneiss	74.96	0.08	13.82	0.93	0.02	0.10	1.07	3.98	4.97	0.02	0.38	ND	100.33
01-CAM-127A	Chrome Lake	OTH-047	Grab	Serpentinite	37.43	0.06	1.52	10.46	0.12	36.93	1.03	0.01	ND	ND	12.35	ND	99.90
01-CAM-128A	Chrome Lake	OTH-047	Grab	Olivine-gabbronorite	45.61	3.23	14.08	12.20	0.08	11.02	4.12	1.88	2.11	0.39	4.44	0.01	99.15
01-CAM-129A	Chrome Lake	OTH-047	Grab	Serpentinite	36.88	0.08	1.90	13.17	0.06	34.92	0.05	0.02	ND	ND	12.33	ND	99.42
01-CAM-130A	Chrome Lake	OTH-047	Grab	Serpentinite	34.40	0.06	1.40	13.88	0.12	34.44	0.91	0.02	ND	ND	13.70	ND	98.93
01-CAM-131A	Chrome Lake	OTH-047	Grab	Serpentinite	37.06	0.10	1.88	9.97	0.07	36.16	ND	ND	ND	ND	13.84	0.01	99.04
01-CAM-132A	Chrome Lake	OTH-047	Grab	Serpentinite	35.46	0.04	1.22	10.75	0.14	35.18	2.34	ND	ND	ND	13.11	0.17	98.24
01-CAM-133A	Chrome Lake	OTH-047	Grab	Serpentinite	34.74	0.05	1.20	13.18	0.09	35.37	1.83	ND	ND	ND	13.04	ND	99.50
01-CAM-134A	Chrome Lake	OTH-047	Grab	Serpentinite	39.11	0.05	1.41	9.87	0.12	37.53	ND	ND	ND	ND	11.19	0.07	99.26
01-CAM-135A	Chrome Lake	OTH-047	Grab	Chromite	6.51	0.25	10.20	17.88	0.50	16.66	2.17	0.06	0.02	ND	4.36	ND	58.61
01-CAM-135B	Chrome Lake	OTH-047	Grab	Serpentinite	34.42	0.04	1.29	7.87	0.14	35.98	1.33	0.02	0.04	0.02	14.93	ND	96.09

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	S	TOTAL
				(Detection Limit-->)	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.05%	0.01%	
01-CAM-136A	Chrome Lake	OTH-047	Grab	Serpentinite	35.63	0.03	0.94	8.95	0.09	36.55	0.95	0.01	ND	ND	14.53	ND	97.67
01-CAM-137A	Chrome Lake	OTH-047	Grab	Serpentinite	18.04	0.16	5.53	15.27	0.36	30.10	0.07	0.04	ND	ND	7.03	ND	76.57
01-CAM-138A	Puddy Lake	OTH-047	Grab	Serpentinite	34.79	0.01	1.31	10.43	0.06	36.67	0.85	0.01	ND	ND	16.13	ND	100.24
01-CAM-139A	Puddy Lake	OTH-047	Grab	Serpentinite	31.20	0.01	0.39	10.62	0.09	33.88	5.96	ND	ND	ND	18.22	ND	100.37
01-CAM-140A	Puddy Lake	OTH-047	Grab	Pyroxenite-serpentinite	37.92	0.01	1.25	5.76	0.02	38.92	ND	0.01	ND	ND	16.11	ND	99.91
01-CAM-141A	Puddy Lake	OTH-047	Grab	Serpentinite	36.33	0.02	0.59	8.18	0.11	34.90	3.40	ND	ND	ND	15.20	ND	98.73
01-CAM-142A	Puddy Lake	OTH-047	Grab	Serpentinite	37.93	0.01	0.51	3.21	0.08	39.25	0.78	ND	ND	ND	18.66	ND	100.43
01-CAM-143A	Puddy Lake	OTH-047	Grab	Serpentinite	34.83	0.03	1.57	8.50	0.12	36.31	ND	0.01	ND	ND	16.79	ND	98.10
01-CAM-144A	Puddy Lake	OTH-047	Grab	Serpentinite	35.56	0.02	0.81	11.52	0.05	35.79	0.10	0.02	ND	ND	15.51	ND	99.37
01-CAM-145A	Puddy Lake	OTH-047	Grab	Serpentinite	35.12	0.02	0.73	13.83	0.03	36.40	ND	ND	ND	ND	13.58	ND	99.65
01-CAM-146A	Puddy Lake	OTH-047	Grab	Peridotite	40.99	0.09	2.74	9.51	0.13	33.49	2.72	0.13	ND	ND	10.51	ND	100.31
01-CAM-147A	Puddy Lake	OTH-047	Grab	Granite	61.16	1.00	17.02	7.12	0.11	2.56	5.58	4.03	1.23	0.19	0.91	0.06	100.90
01-CAM-148A	Puddy Lake	OTH-047	Grab	Serpentinite	35.36	0.11	2.18	11.25	0.09	35.72	ND	0.02	ND	ND	14.46	ND	99.09
01-CMV-141A	Killala Lake	OTH-048	Grab	Pg-bearing clinopyroxenite	44.61	0.38	2.44	18.06	0.26	11.62	18.37	1.23	0.10	2.01	ND	2.70	98.89
01-CMV-142A	Killala Lake	OTH-048	Grab	Olivine-gabbro to troctolite	43.34	0.83	18.62	15.75	0.19	9.15	9.53	2.54	0.40	0.73	ND	0.25	101.09
01-CMV-142B	Killala Lake	OTH-048	Grab	Troctolite	41.78	0.76	18.12	17.50	0.20	9.47	7.57	2.36	0.46	0.33	2.50	0.60	101.06
01-CMV-143A	Killala Lake	OTH-048	Grab	Troctolite	47.96	0.39	17.65	11.68	0.21	7.02	6.86	4.71	2.41	0.48	0.92	0.50	100.28
01-CMV-144A	Killala Lake	OTH-048	Grab	Melagabbro	38.67	3.09	9.65	19.82	0.23	11.06	15.06	1.21	0.26	0.92	ND	0.04	99.75
01-CMV-144B	Killala Lake	OTH-048	Grab	Olivine-gabbro	44.48	0.54	17.67	12.58	0.17	9.20	10.74	3.45	1.14	0.41	1.11	0.02	101.50
01-CMV-145A	Killala Lake	OTH-048	Grab	Leucogabbro	45.68	0.34	19.73	8.21	0.17	4.75	10.04	8.09	2.09	0.28	0.75	0.03	100.12
01-CMV-121A	Coldwell Complex	OTH-049	Grab	Ol-gabbronorite to ol-gabbro	35.40	2.46	12.98	26.73	0.28	7.85	10.02	1.49	0.23	1.89	0.85	2.14	100.19
01-CMV-122A	Coldwell Complex	OTH-049	Grab	Anorthosite	48.47	1.22	26.89	5.93	0.05	0.34	9.45	4.69	1.05	0.04	2.03	0.03	100.16
01-CMV-122B	Coldwell Complex	OTH-049	Grab	Anorthosite	51.30	0.88	25.08	4.30	0.06	1.02	9.77	5.12	1.06	0.20	1.77	0.01	100.57
01-CMV-123A	Coldwell Complex	OTH-049	Grab	Gabbro to metagabbro	41.88	1.70	18.72	13.27	0.22	4.62	11.75	3.16	1.00	2.13	1.73	0.20	100.18
01-CMV-124A1	Coldwell Complex	OTH-049	Grab	Metagabbro	28.44	7.44	3.54	39.26	0.79	4.91	11.89	0.70	0.15	1.63	ND	0.62	98.43
01-CMV-124A2	Coldwell Complex	OTH-049	Grab	Websterite to pg-websterite	33.78	5.90	4.47	37.42	0.86	4.23	10.16	1.03	0.81	1.39	ND	0.28	98.92
01-CMV-125A	Coldwell Complex	OTH-049	Grab	Mafic metavolcanic metabasalt	49.39	1.97	14.86	14.74	0.27	3.26	8.67	3.90	2.16	1.01	0.31	0.02	100.54
01-CMV-126A	Coldwell Complex	OTH-049	Grab	Olivine-gabbro	43.45	1.62	12.05	18.81	0.28	7.91	11.32	1.97	0.86	1.17	ND	0.70	99.47
01-CMV-127A	Coldwell Complex	OTH-049	Grab	Gabbro to gabbronorite	40.65	2.34	14.61	17.05	0.28	5.64	14.03	2.56	0.33	1.89	ND	0.30	99.29
01-CMV-128A	Coldwell Complex	OTH-049	Grab	Ol-gabbro to ol-gabbronorite	45.70	0.56	16.05	13.21	0.17	7.88	12.91	1.43	0.37	0.10	ND	1.59	98.29
01-CMV-128B	Coldwell Complex	OTH-049	Grab	Gabbro?	45.37	1.32	13.96	16.61	0.24	8.92	12.02	2.29	0.30	0.22	ND	0.04	101.08
01-CMV-129A	Coldwell Complex	OTH-049	Grab	Olivine gabbronorite	47.00	0.22	18.95	13.10	0.20	9.77	9.53	2.59	0.37	0.08	ND	ND	101.46
01-CMV-130A	Coldwell Complex	OTH-049	Grab	Olivine bearing gabbro	48.84	0.71	17.91	10.80	0.18	6.28	12.90	2.77	0.50	0.31	0.13	ND	101.34
01-RAS-231A	Musher Lake Pluton	OTH-050	Grab	Granodiorite	62.90	0.61	16.98	4.75	0.07	2.24	4.22	5.24	2.30	0.22	0.75	ND	100.28
01-RAS-232A	White Lake	OTH-051	Grab	Metamesogabbro	56.40	0.78	11.86	8.29	0.15	8.61	8.29	3.41	1.98	0.30	0.67	ND	100.74
01-RAS-233A	White Lake	OTH-051	Grab	Metamesogabbro	51.25	0.91	12.18	11.57	0.21	9.69	9.21	3.25	1.45	0.32	0.70	0.01	100.74
01-RAS-234A	White Lake	OTH-051	Grab	Metamelagabbro	48.52	1.19	11.04	12.60	0.17	10.82	9.68	2.65	1.73	0.38	0.72	0.12	99.50
01-RAS-237A	White Lake	OTH-051	Grab	Metamelagabbro	50.26	1.27	13.91	15.51	0.23	6.58	10.86	1.93	0.12	0.09	0.64	0.09	101.42

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-RAS-238A	White Lake	OTH-051	Grab	Metamelagabbro	53.19	1.16	15.12	10.86	0.15	7.27	9.64	2.07	0.19	0.16	1.02	0.33	100.84
01-RAS-239A	White Lake	OTH-051	Grab	Metamelagabbro	49.20	0.80	17.92	11.37	0.17	6.66	12.05	2.21	0.17	0.06	0.52	0.02	101.14
01-RAS-240A	White Lake	OTH-051	Grab	Metamelagabbro	49.82	0.78	15.17	11.92	0.20	7.85	12.04	2.39	0.16	0.05	0.46	0.03	100.86
01-RAS-241A	White Lake	OTH-051	Grab	Metamelagabbro	51.40	1.10	13.88	12.68	0.20	7.61	9.92	3.33	0.25	0.08	0.73	0.01	101.16
01-RAS-242A	White Lake	OTH-051	Grab	Metamelagabbro	48.75	0.61	12.96	10.14	0.16	10.51	13.68	1.52	0.45	0.05	1.06	0.05	99.89
01-RAS-243A	White Lake	OTH-051	Grab	Metamelagabbro	51.99	1.49	16.55	12.71	0.29	6.78	5.92	4.01	0.13	0.16	1.20	0.02	101.23
01-RAS-244A	White Lake	OTH-051	Grab	Dunite to lherzolite	35.02	0.08	1.09	8.17	0.12	39.44	0.04	0.01	ND	ND	15.45	0.14	99.42
01-RAS-245A	White Lake	OTH-051	Grab	Metamelagabbro	50.15	0.70	11.20	12.82	0.20	11.19	10.32	2.72	0.10	0.05	0.74	0.01	100.20
01-RAS-246A	White Lake	OTH-051	Grab	Metamesogabbro	51.81	0.27	4.31	8.85	0.15	22.37	7.36	0.38	2.56	0.03	2.07	ND	100.17
01-RAS-247A	White Lake	OTH-051	Grab	Metamelagabbro	47.42	1.06	10.20	11.13	0.17	12.84	11.44	2.90	0.91	0.13	1.61	0.02	99.82
01-RAS-248A	White Lake	OTH-051	Grab	Metamelagabbro	50.80	0.69	10.64	9.97	0.16	11.66	10.06	3.11	1.03	0.17	1.53	0.03	99.82
01-RAS-249A	White Lake	OTH-051	Grab	Metahornblendite	50.65	0.46	5.86	9.47	0.16	18.70	11.40	1.50	0.30	0.10	1.70	0.10	100.31
01-RAS-250A	White Lake	OTH-051	Grab	Metameso-leucogabbro	50.51	0.90	16.77	9.89	0.16	6.59	8.77	4.52	1.28	0.34	0.86	0.01	100.59
01-RAS-251A	White Lake	OTH-051	Grab	Metahornblendite	49.98	0.40	6.51	9.75	0.16	15.78	13.72	1.77	1.30	0.10	0.81	0.16	100.27
01-RAS-252A	White Lake	OTH-051	Grab	Metahornblendite	46.81	0.44	7.79	9.08	0.15	20.83	9.02	1.18	1.18	0.17	2.92	0.08	99.55
01-RAS-235A	White River	OTH-052	Grab	Hornblendite	48.65	0.74	8.35	8.70	0.15	12.78	16.10	1.74	1.52	0.34	0.96	0.01	100.02
01-RAS-236A	White River	OTH-052	Grab	Hornblendite	48.20	0.91	9.54	8.94	0.13	11.58	15.56	1.80	1.84	0.14	1.05	ND	99.69
01-CMV-113A	Shabotik	OTH-053	Grab	Amphibolite	48.04	0.70	11.39	10.87	0.22	12.70	10.74	2.03	1.44	0.19	1.52	ND	99.83
01-CMV-114A	Shabotik	OTH-053	Grab	Metagabbro	52.15	0.63	12.49	7.68	0.15	8.89	10.89	3.18	2.47	0.44	0.95	ND	99.92
01-CMV-115A	Bulldozer	OTH-054	Grab	Qz-diorite or hornblende-diorite	51.76	0.84	18.25	9.49	0.13	3.77	8.26	5.53	1.17	0.60	0.78	0.01	100.59
01-CMV-115B	Bulldozer	OTH-054	Grab	Amphibolite	39.84	2.25	10.30	19.52	0.26	9.91	10.76	1.06	3.41	1.81	0.82	0.03	99.92
01-CMV-116A1	Bulldozer	OTH-054	Grab	Metamelagabbro to metagabbro	40.41	0.99	17.12	17.66	0.11	5.69	8.66	2.63	1.52	0.79	4.52	4.64	100.09
01-CMV-116A2	Bulldozer	OTH-054	Grab	Metagabbro to metaleucogabbro	44.50	1.00	19.55	11.41	0.10	5.12	11.00	3.07	1.18	0.38	2.56	1.73	99.87
01-CMV-116B	Bulldozer	OTH-054	Grab	Hornblendite	42.11	2.02	9.72	15.31	0.23	13.17	13.90	1.14	0.78	0.16	1.27	0.26	99.81
01-CMV-117A	Bulldozer	OTH-054	Grab	Gabbro	50.81	1.06	15.20	14.09	0.21	6.45	10.08	2.43	0.73	0.10	0.81	0.08	101.97
01-CMV-117B	Bulldozer	OTH-054	Grab	Metapyroxenite or hornblendite	38.75	2.09	7.36	21.45	0.21	12.95	13.93	1.25	0.50	0.59	0.59	0.03	99.67
01-CMV-117C	Bulldozer	OTH-054	Grab	Metagabbro/hb-gabbro	50.40	0.89	17.47	10.72	0.15	5.13	8.04	4.18	1.99	0.55	1.21	0.02	100.72
01-CMV-117D	Bulldozer	OTH-054	Grab	Metapyroxenite	41.15	1.86	3.76	23.83	0.32	13.35	14.38	0.81	0.26	0.59	0.45	0.01	100.76
01-GRD-001A	Bulldozer	OTH-054	Grab	Metamela hb gab.to amphibolite	45.48	1.62	13.45	14.34	0.25	9.62	10.02	2.31	2.10	0.58	1.00	0.02	100.77
01-GRD-001B	Bulldozer	OTH-054	Grab	Metagabbro to hb-gabbro	46.96	1.35	16.66	12.27	0.20	7.45	8.21	3.33	2.66	0.52	0.99	0.01	100.60
01-GRD-002A	Bulldozer	OTH-054	Grab	Gabbro	50.73	1.42	14.29	16.34	0.23	5.00	9.18	2.59	0.81	0.16	0.90	0.14	101.65
01-GRD-002B	Bulldozer	OTH-054	Grab	Metagabbro to hb-gabbro	49.73	1.25	14.45	11.74	0.15	8.56	8.39	3.15	1.89	0.11	1.73	0.02	101.15
01-GRD-002C	Bulldozer	OTH-054	Grab	Metapyroxenite	51.10	0.53	6.74	9.17	0.18	13.42	16.30	1.46	0.76	0.05	1.25	0.01	100.96
01-CMV-118A	Moshkinabi	OTH-055	Grab	Metagabbro	48.95	0.26	13.26	8.68	0.15	12.52	14.50	0.69	0.26	ND	1.03	0.01	100.28
01-CMV-118B	Moshkinabi	OTH-055	Grab	Meta-melagabbro	46.27	0.22	13.49	12.13	0.16	11.96	13.54	0.98	0.19	ND	1.02	0.33	99.97
01-CMV-118C	Moshkinabi	OTH-055	Grab	Amphibolite	45.05	0.15	8.83	12.44	0.16	20.12	9.37	0.50	0.05	ND	3.82	0.02	100.49
01-CMV-118D	Moshkinabi	OTH-055	Grab	Meta-melagabbro/amphibolite	48.62	0.18	8.05	12.56	0.24	18.04	10.33	0.97	0.09	ND	1.83	0.02	100.92
01-CMV-118E	Moshkinabi	OTH-055	Grab	Metagabbro	47.36	0.26	18.61	10.13	0.14	8.02	13.68	1.06	0.19	ND	1.20	0.73	100.67

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	S	TOTAL
				(Detection Limit-->)	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.05%	0.01%	
01-CMV-118F	Moshkinabi	OTH-055	Grab	Metagabbro	47.11	0.25	15.09	10.47	0.15	9.81	14.66	0.57	0.10	ND	1.31	1.13	99.53
01-CMV-118G	Moshkinabi	OTH-055	Grab	Metagabbro	52.81	1.58	13.26	12.08	0.16	7.70	10.22	2.71	0.16	0.11	0.48	0.03	101.27
01-CMV-118H	Moshkinabi	OTH-055	Grab	Meta-melagabbro	46.18	0.43	10.29	13.92	0.20	12.99	13.26	0.91	0.12	ND	1.54	0.68	99.84
01-CMV-118I	Moshkinabi	OTH-055	Grab	Massive sulphide	9.48	0.34	4.30	80.27	0.06	0.71	1.42	0.57	0.11	0.01	12.17	29.00	109.45
01-CMV-119A	Moshkinabi	OTH-055	Grab	Meta-leucogabbro	46.88	0.21	24.79	6.47	0.10	4.92	14.35	1.97	0.13	ND	0.71	0.06	100.54
01-CMV-119B	Moshkinabi	OTH-055	Grab	Dunite or peridotite	37.78	0.08	5.37	20.19	0.27	27.94	3.20	0.08	ND	ND	5.12	0.04	100.04
01-CMV-119C	Moshkinabi	OTH-055	Grab	Actinolite and talc schist	43.82	0.08	10.50	12.01	0.17	20.43	8.60	0.56	0.07	ND	4.39	0.01	100.62
01-CMV-119D	Moshkinabi	OTH-055	Grab	Meta-melagabbro	41.39	0.10	13.42	12.20	0.17	19.06	8.82	0.89	0.16	ND	4.44	0.01	100.65
01-CMV-119E	Moshkinabi	OTH-055	Grab	Altered olivine-gabbronorite	41.94	0.13	6.92	17.03	0.25	24.80	4.16	0.13	0.02	ND	5.41	0.03	100.78
01-CMV-119F	Moshkinabi	OTH-055	Grab	Metagabbro	48.22	0.19	14.50	8.99	0.14	11.74	14.03	0.93	0.17	ND	1.46	0.48	100.37
01-CMV-119G	Moshkinabi	OTH-055	Grab	Amphibolite	43.03	0.14	14.23	14.01	0.21	13.04	12.18	1.72	0.30	ND	1.14	0.01	100.02
01-CMV-119H	Moshkinabi	OTH-055	Grab	Amphibolite	50.75	0.57	5.13	14.00	0.19	18.90	9.78	0.56	0.05	ND	1.45	0.58	101.37
01-CMV-119I	Moshkinabi	OTH-055	Grab	Amphibolite	45.49	0.26	8.50	11.34	0.19	18.35	12.53	1.03	0.14	0.84	2.37	0.01	101.04
01-CMV-120A	Moshkinabi	OTH-055	Grab	Metagabbro	46.62	0.19	16.14	8.82	0.15	12.14	14.06	1.22	0.18	ND	0.76	0.10	100.28
01-CMV-120B	Moshkinabi	OTH-055	Grab	Actinolite schist	44.17	0.22	13.63	11.75	0.19	14.54	12.71	1.66	0.28	ND	0.93	0.01	100.08
01-CAM-116A	McVicar Lake	OTH-056	Grab	Hornblende-gabbro	51.79	0.91	16.09	9.36	0.14	5.90	10.55	4.03	0.28	0.15	1.93	0.02	101.12
01-CAM-117A	McVicar Lake	OTH-056	Grab	Monzogranite	75.22	0.22	12.70	1.75	0.01	0.48	1.94	4.79	1.35	0.03	2.45	ND	100.95
01-CAM-118A	McVicar Lake	OTH-056	Grab	Quartz-gabbro to melagabbro	55.98	1.22	15.25	10.97	0.12	3.24	3.76	4.96	0.45	0.21	4.74	0.07	100.90
01-CAM-119A	McVicar Lake	OTH-056	Grab	Hb-gabbro or qz-gabbro	51.30	0.57	15.86	9.77	0.18	8.02	10.22	2.04	0.62	0.11	2.71	0.06	101.42
01-CAM-120A	McVicar Lake	OTH-056	Grab	Quartz-monzogabbro	56.18	0.46	16.19	8.37	0.16	5.64	7.94	3.79	0.56	0.08	2.09	ND	101.47
01-CAM-121A	McVicar Lake	OTH-056	Grab	Hornblende-gabbro	57.80	1.07	15.35	6.89	0.08	3.12	6.44	5.41	0.13	0.24	4.23	ND	100.76
01-CAM-122A	McVicar Lake	OTH-056	Grab	Gabbro	48.81	0.87	14.86	13.41	0.24	7.52	10.79	1.71	0.33	0.22	2.31	0.06	101.08
01-CAM-123A	McVicar Lake	OTH-056	Grab	Chl-qz-carbonate shear veins	47.54	0.46	17.64	6.13	0.13	4.05	9.54	0.28	3.15	0.09	11.50	ND	100.51
01-CAM-124A	McVicar Lake	OTH-056	Grab	Hornblende-gabbro	47.22	1.62	17.30	16.16	0.25	4.12	7.14	3.22	0.31	0.38	3.23	0.10	100.95
01-CAM-125A	McVicar Lake	OTH-056	Grab	Hornblende-gabbro	53.34	0.40	16.76	8.00	0.14	7.02	10.14	2.77	0.52	0.03	1.45	0.01	100.57
01-CAM-126A	McVicar Lake	OTH-056	Grab	Hornblende-gabbro	53.46	0.84	19.03	9.70	0.14	4.19	9.63	2.99	0.43	0.03	0.85	0.04	101.29
01-RAS-176A	McVicar Lake	OTH-056	Grab	Quartz-gabbro	52.04	0.64	16.17	8.81	0.15	6.10	9.51	2.16	0.17	0.12	5.38	0.06	101.23
01-RAS-177A	McVicar Lake	OTH-056	Grab	Mesogabbro	43.51	2.07	18.38	14.82	0.18	4.59	7.83	3.54	0.08	0.86	5.21	0.09	101.06
01-RAS-178A	McVicar Lake	OTH-056	Grab	Quartz-diorite	49.95	0.71	14.58	9.40	0.17	7.57	13.38	1.65	0.15	0.11	3.28	0.06	100.94
01-RAS-179A	McVicar Lake	OTH-056	Grab	Quartz-diorite to leucogabbro	50.05	2.31	15.38	14.53	0.24	4.07	7.53	3.33	0.80	0.85	2.12	0.12	101.21
01-RAS-180A	McVicar Lake	OTH-056	Grab	Mesogabbro	53.03	0.88	16.02	10.23	0.18	5.27	8.46	3.90	0.86	0.13	2.27	0.01	101.24
01-RAS-181A	McVicar Lake	OTH-056	Grab	Mesogabbro	47.17	2.29	16.41	14.11	0.17	3.73	8.71	3.27	0.53	1.22	3.03	0.12	100.65
01-RAS-182A	McVicar Lake	OTH-056	Grab	Leucogabbro	47.32	0.39	20.28	7.85	0.12	7.45	11.15	1.99	0.52	0.05	3.47	0.01	100.59
01-RAS-183A	McVicar Lake	OTH-056	Grab	Mesogabbro	54.71	0.36	13.26	9.89	0.21	8.58	7.77	2.42	1.03	0.07	3.03	ND	101.35
01-RAS-184A	McVicar Lake	OTH-056	Grab	Mesogabbro	50.83	0.52	17.83	9.30	0.14	6.80	7.26	4.39	0.69	0.07	3.19	0.01	101.03
01-RAS-185A	McVicar Lake	OTH-056	Grab	Meso-leucogabbro	52.10	0.97	18.28	10.19	0.15	3.78	9.21	3.34	0.37	0.16	2.77	0.01	101.33
01-RAS-186A	McVicar Lake	OTH-056	Grab	Leuco to mesogabbro	49.22	1.40	16.42	17.63	0.37	1.30	7.52	3.51	0.49	0.45	2.26	0.23	100.56
01-RAS-187A	McVicar Lake	OTH-056	Grab	Mesogabbro	45.04	0.13	19.13	7.37	0.12	10.76	14.36	1.07	0.09	ND	2.88	0.04	100.95

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-RAS-188A	McVicar Lake	OTH-056	Grab	Mesogabbro	47.63	0.16	17.01	6.43	0.12	10.93	16.41	1.21	0.04	ND	0.95	0.05	100.89
01-RAS-189A	McVicar Lake	OTH-056	Grab	Leucogabbro	49.07	0.49	17.93	10.21	0.16	8.42	9.22	2.31	0.84	0.10	2.74	0.01	101.50
01-RAS-190A	McVicar Lake	OTH-056	Grab	Quartz-gabbro	44.77	1.73	14.92	16.63	0.22	7.49	11.56	1.44	0.47	0.08	2.03	0.19	101.33
01-RAS-191A	McVicar Lake	OTH-056	Grab	Mesogabbro-hornblende gabbro	49.12	0.43	18.17	9.41	0.14	7.35	12.19	1.93	0.28	0.03	2.12	0.12	101.16
01-RAS-192A	McVicar Lake	OTH-056	Grab	Mesogabbro	47.69	0.44	15.97	10.04	0.16	9.01	13.82	1.02	0.09	0.01	2.93	0.02	101.19
01-RAS-193A	McVicar Lake	OTH-056	Grab	Mesogabbro	47.68	0.16	17.77	6.24	0.15	9.94	14.43	1.06	0.08	ND	1.87	0.04	99.38
01-RAS-194A	McVicar Lake	OTH-056	Grab	Leucogabbro	46.04	0.14	19.91	6.46	0.10	10.90	13.39	1.00	0.10	0.02	2.53	0.02	100.60
01-RAS-195A	McVicar Lake	OTH-056	Grab	Meso-leucogabbro	45.08	0.08	25.33	4.37	0.07	5.93	16.03	1.46	0.12	ND	2.00	0.02	100.49
01-RAS-196A	McVicar Lake	OTH-056	Grab	Anorthosite to leucogabbro	48.74	0.42	23.90	7.13	0.09	4.37	11.92	2.84	0.40	0.01	1.41	0.08	101.23
01-RAS-197A	McVicar Lake	OTH-056	Grab	Mesogabbro	49.33	0.39	17.26	9.48	0.14	8.33	10.89	1.87	0.78	0.06	2.08	1.10	100.61
84-GRS-0001	Kawashe Lake	OTH-057	Grab		45.13	0.56	18.38	10.62	0.17	9.29	11.82	1.56	0.09	0.04	3.27	0.05	100.94
84-GRS-0051	Kawashe Lake	OTH-057	Grab		53.10	1.36	19.76	8.56	0.12	3.23	8.25	4.75	0.66	0.49	0.67	0.02	100.95
84-GRS-1059	Kawashe Lake	OTH-057	Grab		54.71	1.19	13.90	15.17	0.12	7.53	2.83	3.08	0.73	0.10	2.54	0.03	101.90
84-GRS-1060	Kawashe Lake	OTH-057	Grab		44.19	0.38	16.92	10.77	0.18	12.32	10.25	1.41	0.11	0.02	3.38	0.02	99.93
84-GRS-1062	Kawashe Lake	OTH-057	Grab		44.69	0.80	16.03	12.51	0.19	10.12	12.14	1.65	0.33	0.03	0.65	0.14	99.14
84-GRS-1063	Kawashe Lake	OTH-057	Grab		49.06	0.66	16.21	12.33	0.20	8.93	10.47	1.84	0.13	0.07	1.54	0.03	101.45
84-GRS-1064	Kawashe Lake	OTH-057	Grab		44.03	0.39	17.32	9.84	0.16	10.80	12.82	1.38	0.42	0.02	2.79	0.08	99.98
84-GRS-1067	Kawashe Lake	OTH-057	Grab		48.65	0.87	15.49	12.98	0.18	8.58	10.22	2.82	0.64	0.07	0.59	0.14	101.06
84-GRS-1084	Kawashe Lake	OTH-057	Grab		67.20	0.42	15.63	3.47	0.05	1.40	3.23	4.91	2.58	0.11	1.71	ND	100.72
84-GRS-1094	Kawashe Lake	OTH-057	Grab		50.15	1.01	15.57	12.80	0.21	6.87	9.22	2.72	0.48	0.09	2.02	0.01	101.13
84-GRS-1108	Kawashe Lake	OTH-057	Grab		48.53	0.56	15.54	11.07	0.19	9.36	12.45	1.26	0.14	0.05	1.58	0.10	100.72
84-GRS-1111	Kawashe Lake	OTH-057	Grab		51.81	0.58	13.73	11.08	0.19	8.00	11.96	2.30	0.14	0.04	1.03	0.39	100.88
01-RAS-198A	Dempster Lake	OTH-058	Grab	Metamesogabbro	40.46	0.33	15.69	12.28	0.17	16.27	8.05	1.00	0.03	0.02	6.18	0.09	100.48
01-RAS-199A	Dempster Lake	OTH-058	Grab	Metagabbro?	42.16	0.39	21.35	6.93	0.10	6.88	13.03	2.36	0.03	0.03	7.67	0.01	100.93
01-RAS-200A	Dempster Lake	OTH-058	Grab	Metamesogabbro	43.81	0.41	20.97	9.35	0.13	8.98	10.66	1.30	0.02	0.02	5.80	0.02	101.44
01-RAS-201A	Dempster Lake	OTH-058	Grab	Metaleucogabbro	42.93	0.39	19.91	7.63	0.11	7.96	9.21	3.14	0.04	0.03	7.63	ND	98.97
01-RAS-202A	Dempster Lake	OTH-058	Grab	Metamelagabbro	44.17	0.61	18.99	8.77	0.12	7.18	10.77	2.38	0.02	0.04	7.66	0.06	100.71
01-RAS-203A	Dempster Lake	OTH-058	Grab	Meta-andesite	57.43	0.67	16.68	7.54	0.11	4.91	6.33	4.11	0.31	0.16	2.81	0.03	101.07
01-RAS-208A	Dempster Lake	OTH-058	Grab	Hornblende-gabbro	48.07	2.22	13.31	17.53	0.24	5.74	8.82	2.04	0.11	0.10	2.92	0.09	101.09
84-GRS-0151	Dempster Lake	OTH-058	Grab		56.29	1.05	14.48	13.26	0.19	4.51	7.87	2.86	0.21	0.10	0.67	0.08	101.50
84-GRS-1210	Dempster Lake	OTH-058	Grab		50.63	0.56	16.53	9.91	0.17	8.33	11.97	1.84	0.34	0.05	0.73	0.37	101.06
84-GRS-1243	Dempster Lake	OTH-058	Grab		61.00	1.06	13.42	13.53	0.19	1.45	4.50	4.30	0.87	0.22	0.51	ND	101.02
84-GRS-1246	Dempster Lake	OTH-058	Grab		57.04	0.81	14.67	12.16	0.17	3.71	6.08	4.48	0.76	0.11	1.40	ND	101.40
84-GRS-1250	Dempster Lake	OTH-058	Grab		55.68	1.24	13.59	15.16	0.18	3.31	6.68	3.82	0.54	0.14	1.16	0.04	101.49
01-RAS-162A	Thierry Mine	OTH-059	Grab	Metagabbro-metapyroxenite	42.84	0.97	10.35	23.52	0.32	10.75	6.31	2.41	1.40	0.06	1.14	0.14	100.06
01-RAS-163A	July Falls	OTH-060	Grab	Quartz-diorite	59.61	0.82	15.92	7.96	0.11	2.81	5.42	4.94	1.44	0.17	1.83	0.01	101.02
01-RAS-164A	July Falls	OTH-060	Grab	Quartz-diorite	68.78	0.34	16.70	2.98	0.03	1.06	3.77	5.17	1.17	0.10	0.58	ND	100.70
01-RAS-165A	July Falls	OTH-060	Grab	Quartz-gabbro	63.43	0.40	14.94	4.65	0.11	3.21	4.77	4.03	3.03	0.18	0.88	0.01	99.65

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-RAS-166A	July Falls	OTH-060	Grab	Meso-leucogabbro	49.42	0.83	15.80	11.60	0.15	6.15	11.15	3.34	0.56	0.02	1.60	0.13	100.62
01-RAS-167A	July Falls	OTH-060	Grab	Clinopyroxenite	46.99	0.94	5.91	17.84	0.27	12.14	14.46	1.12	0.23	0.04	1.18	0.05	101.09
01-RAS-168A	July Falls	OTH-060	Grab	Quartz-diorite?	55.92	0.80	14.84	8.57	0.11	3.34	5.40	5.24	0.45	0.16	6.14	0.01	100.97
01-RAS-169A	July Falls	OTH-060	Grab	Quartz-diorite?	60.07	0.95	15.10	7.51	0.11	2.96	5.05	4.31	2.17	0.17	2.36	0.01	100.74
01-RAS-170A	July Falls	OTH-060	Grab	Andesite	68.58	0.27	16.32	2.78	0.04	0.90	3.35	5.41	1.60	0.06	1.15	ND	100.44
01-RAS-171A	July Falls	OTH-060	Grab	Quartz-diorite	66.17	0.50	14.75	5.22	0.07	1.82	2.90	4.50	2.07	0.09	2.43	0.01	100.53
01-RAS-172A	July Falls	OTH-060	Grab	Quartz-diorite	61.51	0.72	14.58	7.58	0.13	1.95	4.27	4.98	2.08	0.14	1.84	0.01	99.79
01-RAS-173A	July Falls	OTH-060	Grab	Quartz-diorite	63.60	0.69	14.58	7.31	0.10	1.88	3.96	5.07	1.99	0.13	0.97	ND	100.28
01-RAS-174A	July Falls	OTH-060	Grab	Quartz-diorite	63.77	0.70	14.64	7.61	0.12	1.98	4.13	4.81	2.22	0.14	0.87	ND	100.99
01-RAS-175A	July Falls	OTH-060	Grab	Quartz-diorite	62.67	0.77	14.59	8.33	0.12	1.90	4.41	5.01	1.98	0.15	0.89	0.01	100.82
01-GRD-013A	Lower Caribou	OTH-061	Grab	Pyroxenite	48.74	0.98	6.31	11.88	0.26	11.47	17.01	1.69	0.87	0.15	2.04	0.01	101.40
01-GRD-014A	Lower Caribou	OTH-061	Grab	Melagab. to pg-clinopyroxenite	50.76	0.86	9.68	11.05	0.18	8.71	14.65	2.52	1.22	0.26	0.97	0.25	100.86
01-GRD-014B	Lower Caribou	OTH-061	Grab	Clinopyroxenite	49.66	0.64	6.39	8.53	0.16	12.88	18.27	1.58	1.02	0.17	1.55	0.04	100.85
01-GRD-015A	Lower Caribou	OTH-061	Grab	Clinopyroxenite	48.04	0.91	7.70	9.04	0.13	12.25	19.09	1.12	1.21	0.12	1.65	0.01	101.26
01-GRD-016A	Lower Caribou	OTH-061	Grab	Pyroxenite	47.32	0.89	6.91	10.56	0.19	12.35	18.13	1.39	0.88	0.15	1.73	0.13	100.50
01-GRD-017A	Lower Caribou	OTH-061	Grab	Quartz-monzonite	52.66	1.12	15.55	10.14	0.18	5.13	6.92	4.28	3.45	0.73	0.68	0.01	100.84
01-GRD-018A	Lower Caribou	OTH-061	Grab	Syenitic gabbro	54.82	0.77	18.76	6.97	0.12	3.25	5.37	4.82	4.68	0.55	0.66	0.01	100.77
01-GRD-019A	Lower Caribou	OTH-061	Grab	Clinopyroxenite	49.36	0.62	4.65	8.06	0.13	15.15	20.99	0.80	0.28	0.02	1.66	0.01	101.72
01-GRD-019B	Lower Caribou	OTH-061	Grab	Clinopyroxenite	48.66	0.65	5.71	8.06	0.14	14.58	20.98	0.88	0.31	0.02	1.58	0.01	101.57
01-GRD-020A	Lower Caribou	OTH-061	Grab	Metagabbro or metapyroxenite	49.97	0.53	8.42	12.16	0.19	9.54	13.68	2.16	1.19	0.37	1.77	0.38	99.98
01-GRD-020B	Lower Caribou	OTH-061	Grab	Ol-clinopyroxenite	47.12	0.61	5.30	10.63	0.20	16.58	17.98	1.00	0.21	0.07	1.63	0.01	101.33
01-GRD-021A	Lower Caribou	OTH-061	Grab	Alkali feldspar-syenite	54.59	0.71	19.03	6.09	0.08	3.15	5.25	4.81	4.69	0.44	1.15	0.01	99.99
01-RAS-209A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	47.98	2.19	18.06	14.13	0.15	4.34	9.66	3.54	0.53	0.04	0.60	0.15	101.23
01-RAS-210A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	50.30	1.29	17.96	11.55	0.15	5.45	9.56	3.35	0.59	0.06	0.84	0.02	101.10
01-RAS-211A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	49.40	2.07	15.88	13.44	0.18	5.58	8.92	3.39	1.26	0.15	0.93	0.06	101.20
01-RAS-212A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	50.40	1.01	16.62	11.33	0.18	6.60	8.52	3.25	1.47	0.10	1.46	0.32	100.93
01-RAS-212B	Caribou Stock	OTH-062	Grab	Quartz-gabbro	62.73	0.67	15.82	7.78	0.11	2.66	2.89	3.72	3.23	0.04	1.16	0.05	100.82
01-RAS-213A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	47.37	2.53	17.08	15.31	0.17	4.72	9.94	3.23	0.51	0.04	0.46	0.13	101.35
01-RAS-214A	Caribou Stock	OTH-062	Grab	Quartz-hornblende-gabbro	48.89	3.19	14.39	16.69	0.24	3.94	8.05	3.41	0.96	0.93	0.66	0.10	101.34
01-RAS-215A	Caribou Stock	OTH-062	Grab	Quartz-hornblende-gabbro	47.82	2.87	14.69	15.85	0.21	3.49	7.68	2.72	1.36	0.58	3.06	0.17	100.34
01-RAS-216A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	46.56	1.44	14.88	17.06	0.24	5.94	10.86	1.84	0.80	0.11	0.85	0.26	100.57
01-RAS-217A	Caribou Stock	OTH-062	Grab	Quartz-hornblende-gabbro	44.75	3.55	13.97	17.41	0.25	4.27	8.77	2.96	1.06	0.87	0.90	0.14	98.75
01-RAS-218A	Caribou Stock	OTH-062	Grab	Leucogabbro-anorthosite	65.24	0.55	17.64	4.36	0.06	1.55	5.11	5.01	0.85	0.10	0.47	ND	100.92
01-RAS-219A	Caribou Stock	OTH-062	Grab	Quartz-hornblende-gabbro	45.24	3.84	13.09	19.71	0.29	4.55	9.36	2.72	0.40	1.44	0.22	0.20	100.85
01-RAS-220A	Caribou Stock	OTH-062	Grab	Quartz-hornblende-gabbro	45.46	4.10	14.97	16.73	0.21	5.48	9.77	2.85	0.59	0.03	0.42	0.16	100.60
01-RAS-221A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	45.10	4.57	13.75	17.54	0.23	5.43	8.89	2.70	0.78	0.06	0.62	ND	99.66
01-GRD-022A	Junior Lake Area	OTH-063	Grab	Serpentinite	29.15	0.15	2.51	28.45	0.12	24.43	0.62	0.01	0.01	ND	11.70	8.00	97.15
01-GRD-022B	Junior Lake Area	OTH-063	Grab	Amphibolite	46.63	0.15	3.66	19.30	0.24	17.87	7.12	0.30	0.04	ND	4.92	3.22	100.23

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-GRD-022C	Junior Lake Area	OTH-063	Grab	Peridotite	36.77	0.19	4.70	16.62	0.14	27.68	2.16	0.01	ND	0.01	8.22	1.60	96.50
01-RAS-222A	Junior Lake Area	OTH-063	Grab	Anorthositic gabbro	48.84	0.35	26.10	6.32	0.11	3.80	10.86	2.85	0.15	0.03	1.55	0.08	100.97
01-RAS-223A	Junior Lake Area	OTH-063	Grab	Pg-clinopyroxenite	49.06	0.58	16.63	10.53	0.17	8.49	12.14	2.39	0.14	0.03	0.66	0.05	100.80
01-RAS-224A	Junior Lake Area	OTH-063	Grab	Anorthositic gabbro	46.78	0.13	26.25	6.63	0.14	3.97	14.51	1.78	0.11	ND	0.89	ND	101.19
01-RAS-225A	Junior Lake Area	OTH-063	Grab	Anorthositic gabbro	41.56	0.10	18.72	8.49	0.23	6.86	17.63	1.37	0.06	ND	1.02	1.59	96.04
01-RAS-226A	Junior Lake Area	OTH-063	Grab	Anorthositic gabbro	45.41	0.20	17.07	6.59	0.18	7.28	17.29	1.50	0.04	ND	3.24	0.35	98.82
01-RAS-227A	Junior Lake Area	OTH-063	Grab	Melagab. to anorthositic gabbro	41.61	0.09	16.90	8.95	0.13	14.52	12.35	0.54	0.07	ND	2.99	0.74	98.15
01-RAS-228A	Junior Lake Area	OTH-063	Grab	Anorthosite to leuco-gabbro	43.16	0.07	28.95	4.10	0.11	2.21	16.96	1.56	0.41	ND	1.71	0.10	99.26
01-RAS-229A	Junior Lake Area	OTH-063	Grab	Melagabbro	43.60	1.37	10.34	10.25	0.35	10.32	16.28	0.67	0.98	1.62	3.90	0.01	99.68
01-RAS-230A	Junior Lake Area	OTH-063	Grab	Melamesogabbro	48.42	0.63	15.99	12.12	0.22	8.72	11.90	2.02	0.44	0.03	0.81	ND	101.30
01-RAS-271A	Junior Lake Area	OTH-063	Core	Mesogabbro	38.29	0.28	22.80	8.26	0.13	11.44	10.64	1.55	0.13	0.01	5.66	0.12	99.18
01-RAS-272A	Junior Lake Area	OTH-063	Core	Mesogabbro	45.25	0.24	21.42	6.76	0.12	9.59	12.87	1.17	0.11	0.02	2.60	0.08	100.15
01-RAS-273A	Junior Lake Area	OTH-063	Core	Melagabbro	47.44	0.55	15.69	13.43	0.20	8.84	9.84	2.80	0.15	0.02	1.35	0.22	100.33
01-RAS-274A	Junior Lake Area	OTH-063	Core	Semi-massive sul in melagabbro	13.58	0.31	1.34	65.33	0.14	2.45	6.00	ND	0.05	0.01	9.36	26.40	98.55
01-RAS-275A	Junior Lake Area	OTH-063	Core	Melagabbro	49.93	0.55	15.44	11.88	0.18	8.19	9.76	2.66	0.17	0.03	2.48	0.08	101.27
01-RAS-276A	Junior Lake Area	OTH-063	Core	Melagabbro	48.69	0.69	15.34	16.10	0.19	7.29	9.67	2.19	0.25	0.02	1.26	0.08	101.68
01-RAS-277A	Junior Lake Area	OTH-063	Core	Semi-massive sul magnetite	7.83	1.34	3.68	62.51	0.22	2.19	12.63	ND	0.67	0.03	ND	7.79	88.27
01-RAS-278A	Junior Lake Area	OTH-063	Core	Leuco to mesogabbro	42.04	0.19	18.54	10.22	0.15	10.28	11.83	1.46	0.82	ND	3.76	0.24	99.30
01-RAS-279A	Junior Lake Area	OTH-063	Core	Mesogabbro	42.42	0.22	19.69	8.32	0.13	12.82	11.49	1.02	0.06	ND	3.54	0.26	99.71
01-RAS-280A	Junior Lake Area	OTH-063	Core	Mesogabbro	48.81	1.25	15.12	12.93	0.17	7.82	10.99	1.19	0.98	0.16	0.95	1.02	100.38
01-RAS-281A	Junior Lake Area	OTH-063	Core	Melamesogabbro	42.73	0.21	20.12	9.33	0.11	10.05	11.58	1.57	0.08	0.01	2.61	1.09	98.41
01-RAS-282A	Junior Lake Area	OTH-063	Core	Melagabbro	48.71	0.80	16.31	12.76	0.21	8.06	12.00	1.44	0.15	0.05	0.83	0.13	101.32
01-RAS-283A	Junior Lake Area	OTH-063	Core	Megacrystic gabbro	43.19	0.20	21.37	9.60	0.12	9.27	12.33	1.44	0.08	0.02	2.37	1.12	99.97
01-RAS-284A	Junior Lake Area	OTH-063	Core	Melagabbro	48.80	1.48	15.17	15.97	0.23	5.97	10.14	2.19	0.16	0.11	0.98	0.11	101.20
01-RAS-285A	Junior Lake Area	OTH-063	Core	Mesogabbro	50.07	0.65	15.66	10.92	0.17	8.60	9.92	2.93	0.17	0.05	1.89	0.14	101.03
01-RAS-286A	Junior Lake Area	OTH-063	Core	Melagabbro	51.19	1.53	13.71	13.01	0.22	6.85	9.55	3.94	0.13	0.10	0.93	0.01	101.15
01-RAS-287A	Junior Lake Area	OTH-063	Core	Magnetite gabbro	51.71	2.32	11.93	21.48	0.18	3.94	5.34	4.49	0.14	0.18	ND	0.03	101.67
01-RAS-288A	Junior Lake Area	OTH-063	Core	Melagabbro	46.57	0.84	14.57	12.90	0.19	7.56	10.92	3.23	1.19	0.05	2.80	0.23	100.82
01-RAS-289A	Junior Lake Area	OTH-063	Core	Melamesogabbro	51.23	0.69	16.22	10.88	0.20	8.02	7.01	4.49	0.91	0.05	1.46	0.07	101.15
01-RAS-290A	Junior Lake Area	OTH-063	Core	Melagabbro	49.04	0.77	13.49	12.39	0.20	7.08	11.88	2.51	0.52	0.05	2.77	0.24	100.72
89-BRB-0313	Junior Lake Area	OTH-063	Grab	Pyroxenite	51.32	0.23	4.08	9.10	0.20	18.02	14.67	0.26	0.06	ND	2.84	ND	100.78
89-BRB-0334	Junior Lake Area	OTH-063	Grab	Peridotite	32.78	0.20	3.36	12.04	0.23	34.39	0.16	0.02	ND	ND	9.83	0.03	92.99
89-BRB-0067	Toronto Lake	OTH-064	Grab	Gabbro	55.31	0.67	14.41	8.19	0.14	4.39	6.78	3.35	0.75	0.09	6.75	0.01	100.82
89-BRB-0228	Toronto Lake	OTH-064	Grab	Gabbro	47.99	2.34	12.96	19.45	0.27	4.60	8.89	2.51	0.43	0.15	1.40	0.18	100.98
89-BRB-0234	Toronto Lake	OTH-064	Grab	Gabbro	48.32	1.13	15.92	13.82	0.23	6.55	11.74	2.13	0.16	0.07	1.14	0.05	101.20
89-BRB-0275	Toronto Lake	OTH-064	Grab	Gabbro	47.50	0.68	16.42	11.19	0.17	9.27	8.80	3.25	0.36	0.04	3.49	0.01	101.18
89-BRB-0288	Toronto Lake	OTH-064	Grab	Peridotite	35.34	0.03	0.62	8.37	0.07	39.85	ND	0.01	ND	ND	15.20	0.02	99.41
89-BRB-0300	Toronto Lake	OTH-064	Grab	Gabbro	50.62	1.00	14.20	14.40	0.24	6.86	10.64	2.47	0.27	0.06	0.70	0.22	101.47

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
89-BRB-0344	Toronto Lake	OTH-064	Grab	Peridotite	36.35	0.12	2.30	10.25	0.10	36.68	ND	0.01	ND	0.01	12.36	0.03	98.09
89-BRB-0360	Toronto Lake	OTH-064	Grab	Gabbro	46.64	1.19	16.22	15.28	0.21	7.35	8.57	3.31	0.22	0.07	1.73	0.21	100.78
89-BRB-0364	Toronto Lake	OTH-064	Grab	Diabase	45.21	0.17	24.53	4.39	0.20	3.29	14.00	2.25	0.84	0.01	5.81	0.01	100.70
89-BRB-0367	Toronto Lake	OTH-064	Grab	Gabbro	49.55	0.92	15.27	13.10	0.21	8.09	10.27	2.62	0.20	0.07	0.47	0.02	100.77
89-BRB-0375	Toronto Lake	OTH-064	Grab	Gabbro	49.20	0.95	14.16	14.11	0.22	8.32	10.21	1.72	0.26	0.06	1.78	0.08	100.99
99-GRS-0017A	Marshall Lake	OTH-065	Grab	Mafic intrusive	46.87	1.20	16.09	15.47	0.37	4.98	7.89	4.28	1.23	0.32	0.53	0.20	99.23
99-GRS-0021A	Marshall Lake	OTH-065	Grab	Ultramafic intrusive	39.70	1.69	8.28	18.86	0.15	11.69	17.74	0.65	0.07	0.02	0.57	0.51	99.42
99-GRS-0023A	Marshall Lake	OTH-065	Grab	Mafic intrusive	44.99	0.96	11.72	13.64	0.20	13.04	10.02	1.39	0.79	0.22	2.09	0.14	99.06
97-GRS-0034A	O'Sullivan Lake	OTH-066	Grab	Felsic Tuff	71.06	0.38	14.59	2.73	0.02	0.99	2.83	4.40	0.90	0.11	1.28	ND	99.29
97-GRS-0073A	O'Sullivan Lake	OTH-066	Grab	Felsic intrusive	68.21	0.36	15.12	3.12	0.03	1.10	4.37	3.77	1.57	0.08	1.91	0.07	99.64
97-GRS-0115A	O'Sullivan Lake	OTH-066	Grab	Ultramafic intrusive	38.09	0.14	3.66	13.17	0.16	33.10	2.25	0.08	0.03	ND	8.47	0.01	99.09
97-GRS-0228A	O'Sullivan Lake	OTH-066	Grab	Gabbro	48.26	1.28	13.62	14.85	0.23	6.33	9.94	2.05	0.37	0.08	2.89	0.03	99.90
97-GRS-0250A	O'Sullivan Lake	OTH-066	Grab	Gabbro dike	71.86	0.26	14.31	2.58	0.02	0.74	2.56	5.27	0.93	0.06	0.77	0.10	99.36
98-GRS-0131A	Gzowski	OTH-067	Grab	Gabbro	51.36	1.79	13.59	20.33	0.28	3.64	7.45	2.03	0.20	0.17	0.55	0.07	101.39
98-GRS-0168A	Gzowski	OTH-067	Grab	Ultramafic intrusive	42.45	0.57	12.18	15.28	0.25	16.43	7.61	0.79	0.20	0.04	4.16	0.04	99.96
98-GRS-0171A	Gzowski	OTH-067	Grab	Gabbro	49.30	0.79	13.66	14.19	0.27	7.89	10.17	2.53	0.61	0.06	1.31	0.03	100.78
98-GRS-0172A	Gzowski	OTH-067	Grab	Melanogabbro	68.30	0.43	14.18	6.24	0.06	2.42	0.83	4.96	0.85	0.11	2.36	0.05	100.74
98-GRS-0187A	Gzowski	OTH-067	Grab	Felsic metavolcanic	46.84	0.49	10.42	11.20	0.20	14.33	11.10	1.82	0.57	0.17	1.81	0.02	98.95
98-GRS-2096A	Gzowski	OTH-067	Grab	Basalt	65.11	0.35	14.86	4.95	0.26	1.79	5.70	2.67	1.99	0.09	1.67	0.14	99.44
98-GRS-2097A	Gzowski	OTH-067	Grab	Basalt	57.93	0.76	16.41	8.97	0.19	4.18	5.01	3.20	1.53	0.09	1.25	0.98	99.52
01-GRD-023A	Jackson/Ledingham	OTH-068	Grab	Metapyroxenite	48.94	0.40	6.72	10.29	0.19	14.66	14.45	1.04	0.16	0.01	3.65	0.09	100.51
01-GRD-023B	Jackson/Ledingham	OTH-068	Grab	Metamelagabbro/pyroxenite	49.46	0.38	16.02	9.52	0.17	7.98	12.56	1.53	0.63	0.02	2.54	0.02	100.81
01-GRD-024A	Jackson/Ledingham	OTH-068	Grab	Metamelagabbro	50.66	0.71	14.05	11.51	0.19	7.73	10.97	2.26	0.19	0.05	1.00	0.01	99.32
01-GRD-025A	Jackson/Ledingham	OTH-068	Grab	Gabbronorite	49.03	1.27	15.05	12.90	0.21	7.14	12.07	2.04	0.28	0.12	1.25	0.12	101.36
95-GRS-0308A	Jackson/Ledingham	OTH-068	Grab	Gabbro	49.81	0.88	15.18	12.98	0.23	6.42	11.29	2.90	0.19	0.06	0.95	0.02	100.88
95-GRS-0309A	Jackson/Ledingham	OTH-068	Grab	Rhyolitic tuff	66.16	0.54	15.77	2.87	0.03	1.63	5.08	1.91	1.18	0.13	5.41	0.08	100.70
95-GRS-1319	Jackson/Ledingham	OTH-068	Grab	Gabbro	47.26	0.35	16.39	8.32	0.16	6.82	13.24	1.96	0.08	0.03	6.71	0.01	101.32
95-GRS-2070A	Jackson/Ledingham	OTH-068	Grab		53.20	2.08	15.55	12.66	0.18	4.21	8.23	3.45	0.12	0.12	1.59	0.09	101.37
95-GRS-0263A	Crooked Green	OTH-069	Grab	Gabbro	54.07	0.74	16.72	9.93	0.17	4.74	8.05	3.04	0.47	0.15	1.22	ND	99.30
95-GRS-0266A	Crooked Green	OTH-069	Grab	Gabbro	59.47	0.84	15.61	7.81	0.12	3.50	6.63	3.41	0.44	0.19	1.48	0.01	99.50
01-CAM-149A	Jacobus	OTH-070	Grab	Quartz-gabbro	52.73	0.56	18.26	8.08	0.11	5.59	8.87	2.00	0.61	0.07	3.82	0.10	100.72
01-CAM-150A	Jacobus	OTH-070	Grab	Quartz-gabbro to diorite	50.42	0.60	18.50	9.08	0.12	6.22	10.56	1.82	0.52	0.02	3.12	0.22	101.00
01-CAM-151A	Jacobus	OTH-070	Grab	Tonalite or quartz-diorite	50.28	0.48	17.58	9.01	0.14	7.26	9.36	2.40	0.55	0.08	4.16	0.02	101.30
01-CAM-152A	Jacobus	OTH-070	Grab	Metadiorite	65.56	0.74	15.35	6.33	0.07	1.64	4.44	4.33	0.58	0.17	1.84	0.01	101.06
01-CAM-152B	Jacobus	OTH-070	Grab	Melagabbro	47.99	0.42	15.48	10.88	0.20	8.73	11.49	2.42	0.28	0.24	2.70	ND	100.82
01-CAM-153A	Jacobus	OTH-070	Grab	Quartz-diorite to tonalite	50.61	0.42	15.01	9.26	0.15	9.29	9.10	2.13	0.91	0.06	3.75	0.31	100.69
01-CAM-154A	Jacobus	OTH-070	Grab	Quartz-diorite to tonalite	50.80	0.44	12.48	12.82	0.16	9.62	8.68	1.27	0.72	0.05	2.25	1.86	99.27
01-CAM-155A	Jacobus	OTH-070	Grab	Melagabbro	48.73	0.44	11.70	14.62	0.17	9.99	8.89	1.16	0.56	0.05	2.28	2.62	98.60

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.01%	S 0.01%	TOTAL
01-CAM-156A	Jacobus	OTH-070	Grab	Quartz-diorite to tonalite	53.16	0.51	13.07	9.58	0.19	9.73	9.89	1.82	0.82	0.05	2.19	0.05	101.00
01-CAM-157A	Jacobus	OTH-070	Grab	Felsic to int. metavolcanic	64.09	0.56	15.04	6.42	0.13	2.10	6.97	3.06	0.50	0.12	1.90	0.02	100.90
01-CAM-158A	Nipissing Karalash	OTH-071	Grab	Gabbronorite	52.63	0.68	15.68	11.57	0.20	6.25	10.90	2.26	0.44	0.05	1.09	0.06	101.75
01-CAM-159A	Nipissing Karalash	OTH-071	Grab	Gabbro or gabbronorite	49.80	0.60	15.39	10.18	0.19	6.76	10.51	2.37	1.21	0.05	2.04	0.05	99.09
01-CAM-160A	Nipissing Karalash	OTH-071	Grab	Gabbro or gabbronorite	49.51	0.34	16.49	6.99	0.14	8.47	11.01	2.76	0.97	0.03	2.59	0.03	99.30
01-CAM-161A	Nipissing Karalash	OTH-071	Grab	Gabbronorite	50.42	0.36	16.48	7.82	0.15	8.82	12.86	1.45	0.64	0.02	2.06	0.02	101.09
01-CAM-162A	Nipissing Karalash	OTH-071	Grab	Hornblende-gabbro	51.20	0.63	15.38	10.61	0.19	7.85	10.01	2.04	1.27	0.05	2.15	0.08	101.38
01-CAM-163A	Nipissing Bruce	OTH-072	Grab	Gabbro or gabbronorite	50.50	0.60	14.12	10.31	0.18	8.77	11.28	1.69	0.72	0.05	1.88	0.07	100.10
01-CAM-164A	Nipissing Bruce	OTH-072	Grab	Gabbronorite or cpx-norite	51.87	0.70	13.67	10.88	0.18	9.22	12.21	1.81	0.40	0.05	0.77	0.06	101.76
01-CAM-165A	Nipissing Bruce	OTH-072	Grab	Gabbronorite	47.35	1.93	13.80	16.11	0.20	6.96	8.75	1.91	1.45	0.24	2.29	0.12	100.99
01-CAM-166A	Nipissing Bruce	OTH-072	Grab	Gabbronorite?	50.55	0.53	14.66	9.70	0.17	9.14	10.97	1.70	0.94	0.04	2.41	0.05	100.81
01-CAM-167A	Nipissing Bruce	OTH-072	Grab	Gabbro	47.76	3.31	13.37	19.00	0.24	7.62	9.07	2.16	0.60	0.24	2.14	0.14	100.91
01-CAM-168A	Nipissing Bruce	OTH-072	Grab	Gabbronorite	50.34	0.88	14.67	11.83	0.17	7.16	10.84	1.94	0.66	0.07	1.45	0.06	100.61
01-CAM-169A	Nipissing Bruce	OTH-072	Grab	Gabbronorite	51.80	1.59	14.33	12.21	0.19	6.13	8.73	3.69	0.52	0.15	2.09	0.10	101.43
01-CAM-170A	Nipissing Bruce	OTH-072	Grab	Gabbro or gabbronorite	52.11	1.57	14.31	12.99	0.20	5.75	9.83	2.91	0.65	0.16	0.66	0.13	101.14
01-CAM-170B	Nipissing Bruce	OTH-072	Grab	Gabbronorite	52.19	0.69	17.69	9.85	0.15	6.66	10.32	2.36	0.67	0.06	0.65	0.04	101.29
01-CAM-171A	Nipissing Rose	OTH-073	Grab	Gabbro	52.49	0.87	15.56	11.85	0.18	5.67	10.26	2.52	0.90	0.08	0.84	0.04	101.22
01-CAM-172A	Nipissing Rose	OTH-073	Grab	Monzodiorite to diorite	52.42	1.62	13.75	16.16	0.21	4.22	7.69	2.87	1.26	0.11	0.98	0.08	101.29
01-CAM-173A	Nipissing Rose	OTH-073	Grab	Gabbro	52.09	0.73	14.82	11.59	0.19	6.90	10.72	1.91	0.76	0.06	1.29	0.07	101.07
01-CAM-174A	Nipissing Rose	OTH-073	Grab	Quartz-gabbro	51.35	0.60	15.52	10.54	0.20	7.11	10.78	1.95	1.14	0.05	2.18	0.07	101.42
01-CAM-175A	Nipissing Rose	OTH-073	Grab	Gabbronorite	50.95	0.54	15.80	9.69	0.17	8.17	11.41	1.76	0.64	0.04	1.55	0.06	100.74
01-CAM-176A	Nipissing Rose	OTH-073	Grab	Gabbro	53.82	1.95	13.67	15.28	0.17	2.62	5.86	3.11	1.77	0.15	1.83	0.14	100.24
01-CAM-177A	Nipissing Rose	OTH-073	Grab	Gabbro	52.32	1.79	13.55	15.70	0.17	3.67	7.22	4.02	0.96	0.13	1.58	0.09	101.11
01-CAM-178A	Nipissing Rose	OTH-073	Grab	Gabbro	52.92	1.06	15.15	12.51	0.18	5.13	8.77	2.66	1.18	0.10	1.16	0.04	100.81
01-CAM-179A	Nipissing Rose	OTH-073	Grab	Gabbronorite	50.65	0.48	16.23	8.87	0.16	8.24	12.90	1.58	0.40	0.04	0.79	0.05	100.35
01-CAM-181A	Nipissing Rose	OTH-073	Grab	Hornblende-gabbro	47.67	2.02	14.82	14.02	0.18	5.67	9.27	2.90	1.05	0.16	2.06	0.12	99.82
01-CAM-182A	Nipissing Rose	OTH-073	Grab	Hornblende-gabbro	51.95	1.66	14.72	14.56	0.22	4.07	5.63	3.04	1.94	0.12	2.42	0.03	100.33
01-CAM-183A	Nipissing Rose	OTH-073	Grab	Gabbronorite-opx-gabbro	51.69	0.53	15.43	9.67	0.17	8.15	12.13	1.68	0.55	0.04	1.15	0.04	101.20
01-CAM-184A	Nipissing Rose	OTH-073	Grab	Quartz-gabbro	52.58	1.29	14.26	14.29	0.20	4.72	8.87	2.64	1.09	0.08	0.97	0.06	100.99
01-CAM-185A	Nipissing Rose	OTH-073	Grab	Hornblende-gabbro	52.50	1.02	15.12	13.54	0.21	4.98	7.06	3.07	1.53	0.10	1.82	0.06	100.95
01-CAM-186A	Nipissing Rose	OTH-073	Grab	Quartz-gabbro to gabbronorite	52.02	0.72	14.66	11.85	0.21	6.87	10.23	2.02	1.10	0.06	1.50	0.08	101.23
01-CAM-187A	Nipissing Rose	OTH-073	Grab	Quartz-gabbro to gabbronorite	53.54	1.42	14.04	14.40	0.19	4.03	7.83	2.76	1.77	0.13	1.00	0.07	101.11
01-CAM-188A	Nipissing Rose	OTH-073	Grab	Quartz-monzonite	51.90	1.31	13.74	13.99	0.21	4.11	7.25	3.12	1.82	0.12	1.42	0.06	98.99
01-CAM-189A	Nipissing Rose	OTH-073	Grab	Monzodiorite to monzogabbro	51.95	2.19	13.62	16.52	0.30	3.75	4.09	4.23	2.15	0.14	1.95	0.09	100.89
01-CAM-180A	Otter Township	OTH-074	Grab	Monzonite	53.83	1.08	14.43	12.66	0.11	3.06	3.53	4.23	1.05	0.15	5.17	0.03	101.30
01-RAS-253A	Sun Rise Lake	OTH-075	Grab	Mesogabbro	50.88	1.79	13.88	17.19	0.23	4.16	8.26	2.92	1.03	0.22	0.13	0.06	100.69
01-RAS-254A	Sun Rise Lake	OTH-075	Grab	Metabasalt or mesogabbro	51.58	0.81	15.52	11.32	0.29	6.13	7.52	4.95	0.55	0.04	0.80	0.12	99.50
01-RAS-255A	Sun Rise Lake	OTH-075	Grab	Massive pyrite	32.28	0.46	9.57	34.32	0.13	2.53	2.54	3.33	0.22	0.04	15.76	24.60	101.18

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-RAS-256A	Sun Rose Lake	OTB-075	Grab	Leucogabbro	62.60	0.99	16.00	7.43	0.09	2.66	2.97	3.42	2.40	0.15	1.87	0.28	100.60
01-RAS-257A	Sun Rose Lake	OTB-075	Grab	Melagabbro	48.86	0.69	16.06	12.58	0.27	6.63	10.00	3.40	0.61	0.04	1.69	0.01	100.85
01-RAS-258A	Sun Rose Lake	OTB-075	Grab	Mesogabbro	53.43	1.54	13.00	15.30	0.23	5.25	7.60	2.88	1.13	0.11	1.10	0.04	101.36
01-RAS-259A	Sun Rose Lake	OTB-075	Grab	Mesogabbro	51.19	1.16	14.77	14.96	0.22	5.37	9.36	2.80	0.84	0.12	0.47	0.10	101.26
01-RAS-260A	Pelletier	OTB-076	Grab	Metamesogabbro	50.14	1.31	14.25	12.99	0.31	6.53	11.01	1.75	1.06	0.14	1.30	0.04	100.81
01-RAS-261A	Pelletier	OTB-076	Grab	Metaleucogabbro	53.41	0.86	16.48	9.54	0.13	6.02	9.25	4.51	0.45	0.09	0.59	0.02	101.30
01-RAS-262A	Pelletier	OTB-076	Grab	Metamesogabbro	51.36	0.68	17.29	8.34	0.15	6.03	10.03	4.36	1.20	0.06	1.33	0.01	100.99
01-RAS-263A	Pelletier	OTB-076	Grab	Melagabbro	51.40	0.46	5.19	8.55	0.18	14.92	17.16	1.16	0.63	0.10	1.36	0.01	101.10
01-RAS-264A	Ab. Canyon-Pinard	OTB-077	Grab	Mesogabbro	47.75	1.98	13.58	20.01	0.26	5.29	9.99	2.47	0.29	0.19	ND	0.19	101.47
01-RAS-265A	Ab. Canyon-Pinard	OTB-077	Grab	Mesogabbro	48.59	0.93	15.21	14.00	0.24	8.12	11.14	2.74	0.43	0.12	ND	0.15	101.53
01-RAS-266A	Ab. Canyon-Pinard	OTB-077	Grab	Olivine-gabbro	46.09	0.56	23.07	7.22	0.10	5.40	14.91	2.07	0.23	0.02	0.97	0.11	100.65
01-RAS-267A	Ab. Canyon-Pinard	OTB-077	Grab	Olivine-gabbro	45.76	0.51	14.24	11.39	0.17	11.54	14.14	1.94	0.20	0.01	0.72	0.13	100.62
01-RAS-268A	Ab. Canyon-Pinard	OTB-077	Grab	Olivine-gabbro	41.58	2.42	13.73	19.19	0.20	7.73	12.57	1.58	0.51	0.27	0.67	0.36	100.24
01-RAS-269A	Ab. Canyon-Pinard	OTB-077	Grab	Olivine-gabbro	44.66	0.96	18.34	11.48	0.15	6.85	14.93	1.67	0.36	0.16	1.40	0.19	100.85
01-RAS-270A	Ab. Canyon-Pinard	OTB-077	Grab	Olivine-gabbro	46.12	0.37	18.67	8.76	0.15	6.95	12.36	2.71	0.41	0.15	2.50	0.06	99.17
01-MGB-036A	Montcalm	OTB-078	Core	Mesogabbro	46.36	0.25	21.08	5.52	0.10	7.14	11.66	2.07	0.17	0.03	5.40	0.05	99.76
01-MGB-036C	Montcalm	OTB-078	Core	Norite	48.58	0.41	8.01	14.68	0.23	19.37	4.06	0.59	0.05	0.01	2.50	0.29	99.39
01-MGB-036D	Montcalm	OTB-078	Core	Mesogabbro	48.74	0.21	19.78	7.11	0.12	9.57	9.61	1.52	0.76	0.02	3.29	0.03	100.74
01-MGB-037A	Montcalm	OTB-078	Core	Mesogabbro	47.93	0.22	16.94	6.87	0.12	11.94	8.48	1.42	2.02	0.02	3.94	0.01	99.90
01-MGB-037B	Montcalm	OTB-078	Core	Mesogabbro	48.63	0.20	17.66	7.04	0.12	11.53	9.44	1.21	0.59	0.01	3.39	0.03	99.83
01-MGB-037C	Montcalm	OTB-078	Core	Mesogabbro	46.64	0.16	19.48	6.48	0.12	10.49	8.36	2.53	0.08	0.01	4.77	0.01	99.95
01-MGB-037D	Montcalm	OTB-078	Core	Mesogabbro	48.24	0.21	17.06	7.36	0.13	10.72	8.23	2.97	0.77	0.01	3.74	0.01	99.45
01-MGB-037E	Montcalm	OTB-078	Core	Mesogabbro	48.92	0.20	21.33	5.33	0.09	8.29	10.82	1.39	0.45	0.03	3.27	0.05	100.12
01-MGB-037F	Montcalm	OTB-078	Core	Mesogabbro	48.55	0.17	15.36	8.51	0.15	13.65	8.42	1.19	0.13	ND	3.90	0.02	100.05
01-MGB-038A	Montcalm	OTB-078	Core	Mesogabbro	48.32	0.14	20.72	5.65	0.10	9.12	10.75	1.41	0.20	0.02	4.09	0.05	100.70
01-MGB-038B	Montcalm	OTB-078	Core	Mesogabbro	47.80	0.15	20.10	5.99	0.09	10.24	9.69	1.36	1.01	ND	3.47	0.04	99.93
01-MGB-038C	Montcalm	OTB-078	Core	Mesogabbro	49.05	0.19	19.66	6.39	0.12	9.76	10.91	1.42	0.19	0.02	2.74	0.11	100.42
01-MGB-038D	Montcalm	OTB-078	Core	Mesogabbro	46.49	0.23	18.30	8.68	0.12	8.76	12.16	1.54	0.20	0.02	2.46	0.09	99.16
01-MGB-038E	Montcalm	OTB-078	Core	Melamesogabbro	47.71	0.12	17.15	6.52	0.11	11.71	9.92	1.61	0.24	ND	5.14	0.05	100.24
01-MGB-039A	Montcalm	OTB-078	Core	Mesogabbro-leucogabbro	49.08	0.15	19.70	6.20	0.11	10.05	10.42	1.22	0.09	0.01	3.17	0.03	100.26
01-MGB-039B	Montcalm	OTB-078	Core	Melagabbro	46.52	0.17	15.70	7.92	0.13	13.66	8.49	0.98	0.17	0.01	5.72	0.05	99.88
01-MGB-040A	Montcalm	OTB-078	Core	Leuco to mesogabbro	49.06	0.17	20.55	6.32	0.10	9.26	10.55	1.43	0.15	0.03	3.14	0.07	100.76
01-MGB-040B	Montcalm	OTB-078	Core	Peridotite	41.89	0.11	5.42	17.34	0.06	23.72	3.26	0.02	ND	ND	4.46	2.67	96.31
01-MGB-040C	Montcalm	OTB-078	Core	Melagabbro	49.13	0.70	11.30	9.06	0.14	14.29	9.52	2.95	0.31	0.43	2.23	0.07	99.89
01-MGB-040D	Montcalm	OTB-078	Core	Mesogabbro	47.06	0.13	18.84	6.37	0.10	10.26	9.40	2.59	1.14	ND	5.17	0.06	99.30
01-MGB-041A	Montcalm	OTB-078	Core	Meso-leucogabbro	47.52	0.15	23.05	5.46	0.09	8.11	9.60	1.60	1.30	0.02	3.54	0.06	100.24
01-MGB-041B	Montcalm	OTB-078	Core	Mesogabbro-leucogabbro	50.82	1.01	16.21	8.71	0.11	6.06	7.80	4.54	1.12	0.64	1.97	0.27	99.01
01-MGB-041C	Montcalm	OTB-078	Core	Semi-massive sul	11.42	0.07	4.36	48.53	0.03	3.07	3.73	ND	0.11	0.01	6.29	22.50	101.04

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
00-MG88-041D	Montcalm	OFR 6076	Core	Mesogabbro	46.18	0.19	16.97	7.31	0.13	8.26	15.91	1.09	0.72	ND	3.45	0.12	100.20
00-MG88-041E	Montcalm	OFR 6076	Core	Leucogabbro	32.08	0.05	4.05	14.12	0.06	16.76	14.46	ND	ND	ND	7.59	3.67	93.93
00-MG88-041F	Montcalm	OFR 6076	Core	Mesogabbro	47.74	0.15	15.76	8.09	0.14	13.50	7.42	2.00	0.64	ND	4.20	0.06	99.66
00-MG88-042A	Montcalm	OFR 6076	Core	Leuco to mesogabbro	47.43	0.17	22.46	4.87	0.08	7.99	10.63	1.72	0.37	0.02	3.97	0.04	100.33
00-MG88-042B	Montcalm	OFR 6076	Core	Melagabbro	49.18	0.64	10.79	9.50	0.17	14.58	10.25	1.46	0.19	0.47	2.58	0.37	99.78
00-MG88-042C	Montcalm	OFR 6076	Core	Mesogabbro	46.64	0.25	20.75	5.76	0.09	7.79	12.52	1.25	0.16	0.04	5.08	0.09	100.34
00-MG88-042D	Montcalm	OFR 6076	Core	Net textured sul in websterite	39.75	0.22	6.52	21.79	0.15	15.10	11.60	0.31	0.03	ND	3.10	7.91	96.51
00-MG88-042E	Montcalm	OFR 6076	Core	Leucogabbro	47.80	0.17	20.14	5.76	0.11	8.19	11.24	2.39	0.65	ND	3.43	0.12	100.05
00-CMV-147A	Loveland	OFR 6079	Core	Cannot be identified	57.90	0.45	15.26	7.05	0.14	7.33	6.83	3.48	0.76	0.06	1.67	ND	99.80
00-CMV-147B	Loveland	OFR 6079	Core	Quartz gabbro	56.17	0.90	17.00	7.56	0.11	4.26	7.91	5.45	0.44	0.14	1.75	ND	100.11
00-CMV-147C	Loveland	OFR 6079	Core	Mesogabbro	46.64	0.55	20.41	9.41	0.13	6.06	10.68	2.31	0.53	0.09	3.11	0.03	100.31
00-CMV-147D	Loveland	OFR 6079	Core	Mesogabbro	36.22	0.59	17.04	25.22	0.13	7.22	7.45	1.79	0.12	0.05	4.10	5.55	98.31
00-CMV-147E	Loveland	OFR 6079	Core	Quartz gabbro	47.52	2.46	15.43	16.37	0.24	3.76	7.54	3.45	0.56	0.40	1.89	0.14	99.62
00-CMV-148A	Loveland	OFR 6079	Core	Quartz gabbro	54.35	0.65	17.26	8.02	0.16	3.31	6.38	2.64	0.65	0.12	2.29	0.01	100.09
00-CMV-148B	Loveland	OFR 6079	Core	Mesogabbro	50.56	0.42	18.02	10.60	0.18	6.58	8.87	2.59	0.46	0.04	2.33	0.42	100.05
00-CMV-148C	Loveland	OFR 6079	Core	Quartz gabbro	53.14	0.56	15.97	9.01	0.15	8.27	6.30	2.15	0.67	0.07	2.76	0.01	100.65
00-CMV-148D	Loveland	OFR 6079	Core	Mesogabbro	43.13	0.39	19.89	12.37	0.11	7.82	9.60	1.21	1.59	0.05	2.67	1.66	99.62
00-CMV-149A	Loveland	OFR 6079	Core	Mesogabbro	43.65	0.39	13.54	17.85	0.16	7.63	7.76	2.24	0.31	0.04	1.67	2.89	97.45
00-CMV-150A	Loveland	OFR 6079	Core	Quartz gabbro	55.30	0.35	15.44	8.30	0.14	6.91	6.00	2.25	0.44	0.05	2.75	0.01	100.11
00-CMV-150B	Loveland	OFR 6079	Core	Mesogabbro	39.46	0.44	15.49	20.55	0.19	10.12	7.41	0.76	0.34	0.05	2.24	5.24	97.44
00-CMV-150C	Loveland	OFR 6079	Core	Gabbro	44.46	0.80	14.15	14.34	0.21	10.42	9.17	2.05	0.75	0.05	2.90	0.12	99.52
00-CAM-018B	Kamiskotia	OFR 6080	Grab	Peridotite-lherzolite	39.26	0.20	4.56	10.16	0.15	32.30	3.87	0.07	0.03	ND	8.71	0.02	100.11
00-CAM-019A	Kamiskotia	OFR 6080	Grab	Gabbro	45.17	0.09	17.95	5.15	0.11	11.98	15.20	0.94	0.02	ND	4.07	ND	100.67
00-CAM-020A	Kamiskotia	OFR 6080	Grab	Serpentinite	36.08	0.05	12.16	10.46	0.12	26.19	4.75	0.02	ND	ND	10.14	ND	100.30
00-CAM-021A	Kamiskotia	OFR 6080	Grab	Chlorite actinolite schist	39.73	0.03	10.40	9.02	0.12	24.86	6.11	0.03	ND	ND	6.21	ND	100.00
00-CAM-022A	Kamiskotia	OFR 6080	Grab	Leucogabbro	43.02	0.05	7.65	9.58	0.12	22.53	10.05	0.10	ND	ND	7.04	0.03	100.26
00-CAM-023A	Kamiskotia	OFR 6080	Grab	Melagabbro	46.42	1.94	13.37	17.40	0.25	5.42	9.42	2.30	0.74	0.25	0.86	0.16	100.26
00-CAM-024A	Kamiskotia	OFR 6080	Grab	Gabbro	48.47	0.16	16.76	6.79	0.13	9.75	11.05	1.57	0.13	ND	2.98	0.01	100.12
00-CAM-025A	Kamiskotia	OFR 6080	Grab	Gabbronorite to opx gabbro	49.37	1.54	13.64	16.53	0.24	6.25	9.05	2.42	0.50	0.15	0.94	0.00	100.34
00-CAM-026A	Kamiskotia	OFR 6080	Grab	Gabbro	49.76	1.17	14.77	15.00	0.23	6.06	10.34	2.50	0.31	0.11	0.43	0.06	100.19
00-CAM-027A	Kamiskotia	OFR 6080	Grab	Gabbro	49.68	1.00	15.00	14.17	0.22	6.66	10.47	2.35	0.41	0.09	0.63	0.07	100.06
00-CAM-028A	Kamiskotia	OFR 6080	Grab	Metamelagabbro	48.56	0.17	16.31	6.72	0.14	10.65	13.35	1.64	0.15	ND	2.63	0.02	100.00
00-CAM-029A	Kamiskotia	OFR 6080	Grab	Metamelagabbro	50.20	0.47	14.76	10.17	0.16	10.20	7.32	1.86	0.87	0.04	3.36	0.02	99.66
00-CAM-030A	Kamiskotia	OFR 6080	Grab	Gabbro to gabbronorite	50.17	1.25	14.42	15.33	0.23	5.70	8.98	2.45	1.26	0.15	1.16	0.12	100.17
00-RAS-023A	Kamiskotia	OFR 6080	Grab	Mesogabbro	48.95	1.57	13.70	16.27	0.24	5.54	9.30	2.35	0.55	0.15	1.07	0.12	99.07
00-RAS-024A	Kamiskotia	OFR 6080	Grab	Metamesogabbro	49.95	1.65	14.06	16.35	0.25	4.90	9.24	2.66	0.74	0.15	0.09	0.15	100.15
00-RAS-025A	Kamiskotia	OFR 6080	Grab	Hornblende gabbro	53.12	0.23	18.92	6.14	0.13	7.70	10.45	3.01	0.17	ND	2.54	0.01	100.06
00-RAS-026A	Kamiskotia	OFR 6080	Grab	Gabbro	44.09	1.57	12.40	16.34	0.22	6.45	9.51	1.86	0.02	0.23	5.31	0.13	100.05

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-RAS-027A	Kamiskotia	OTH-080	Grab	Mesogabbro	48.24	1.22	15.06	13.97	0.22	6.98	9.60	2.40	0.19	0.13	2.69	0.09	100.70
01-RAS-028A	Kamiskotia	OTH-080	Grab	Mesogabbro	43.57	0.26	22.72	10.45	0.13	6.50	9.78	2.43	0.90	0.02	4.13	0.01	100.90
01-RAS-029A	Kamiskotia	OTH-080	Grab	Mesogabbro	48.60	1.43	12.82	14.74	0.17	7.20	10.70	2.57	0.12	0.20	2.44	0.06	100.99
01-RAS-030A	Kamiskotia	OTH-080	Grab	Leucogabbro	46.02	1.56	18.91	13.77	0.17	4.15	11.42	2.45	0.18	0.06	2.24	0.20	100.93
01-RAS-031A	Kamiskotia	OTH-080	Grab	Mesogabbro	43.60	2.90	15.13	18.05	0.20	5.89	10.92	2.29	0.08	0.03	1.65	0.21	100.75
01-RAS-032A	Kamiskotia	OTH-080	Grab	Olivine-gabbro	43.90	1.76	17.84	15.04	0.18	5.07	12.23	2.19	0.05	0.05	0.83	0.19	99.14
01-RAS-033A	Kamiskotia	OTH-080	Grab	Mesogabbro	47.80	0.22	16.16	8.04	0.13	11.01	12.62	1.06	0.02	ND	3.46	0.05	100.50
01-RAS-034A	Kamiskotia	OTH-080	Grab	Leucogabbro	47.14	0.24	16.87	8.17	0.14	10.09	13.22	1.02	0.01	ND	3.16	0.16	100.07
01-RAS-035A	Kamiskotia	OTH-080	Grab	Mesogabbro	45.87	0.24	14.85	11.71	0.18	10.47	10.80	2.23	0.08	ND	3.14	0.17	99.57
01-RAS-036A	Kamiskotia	OTH-080	Grab	Hornblende-gabbro	46.33	1.60	19.73	12.29	0.14	3.85	11.87	2.44	0.19	0.03	2.28	0.21	100.75
01-CAM-031A	Cunningham	OTH-081	Grab	Serpentinite	40.10	0.21	3.44	15.03	0.20	36.06	2.09	0.03	0.01	0.01	2.52	0.04	99.71
01-CAM-032A	Cunningham	OTH-081	Grab	Dunite to lherzolite	41.29	0.19	3.77	14.23	0.17	37.87	1.03	0.01	ND	ND	1.48	0.02	100.05
01-CAM-033A	Cunningham	OTH-081	Grab	Serpentinite	40.95	0.19	3.54	14.61	0.16	37.61	0.52	0.03	0.02	0.01	1.36	0.01	98.99
01-CAM-034A	Cunningham	OTH-081	Grab	Gabbro	47.86	2.08	12.82	18.35	0.26	6.16	9.03	2.16	1.34	0.23	1.01	0.17	101.28
01-CAM-035A	Cunningham	OTH-081	Grab	Gabbro to hornblende-gabbro	50.44	0.72	15.71	9.72	0.16	7.32	8.10	2.63	1.99	0.08	2.17	0.02	99.04
01-CAM-036A	Cunningham	OTH-081	Grab	Gabbro	51.31	0.47	13.95	8.63	0.17	8.17	10.37	3.32	0.64	0.04	2.29	0.05	99.35
01-CAM-037A	Cunningham	OTH-081	Grab	Gabbro	49.43	0.28	19.82	5.85	0.13	8.54	8.14	1.29	3.23	0.03	3.87	0.02	100.60
01-CAM-038A	Cunningham	OTH-081	Grab	Serpentinite	36.14	0.17	2.85	12.90	0.16	34.21	1.26	0.03	0.01	0.01	11.55	0.01	99.29
01-RAS-037A	Cunningham	OTH-081	Grab	Quartz-gabbro to quartz diorite	50.36	0.91	15.63	10.61	0.19	4.61	9.39	2.24	0.67	0.09	4.14	0.10	98.84
01-RAS-038A	Cunningham	OTH-081	Grab	Mesogabbro-leucogabbro	49.94	0.33	17.97	6.81	0.13	8.46	9.86	2.50	1.68	0.03	3.17	0.06	100.88
01-RAS-039A	Cunningham	OTH-081	Grab	Mesogabbro	48.18	0.89	15.45	12.33	0.20	7.46	10.46	2.61	0.96	0.06	2.06	0.11	100.66
01-RAS-040A	Cunningham	OTH-081	Grab	Dunite	38.60	0.26	4.41	13.09	0.17	31.01	2.76	0.15	0.05	0.02	9.04	0.02	99.57
01-RAS-041A	Cunningham	OTH-081	Grab	Melagabbro	49.51	0.99	13.84	13.01	0.25	8.34	8.37	2.60	0.97	0.07	2.94	0.11	100.89
01-RAS-042A	Cunningham	OTH-081	Grab	Mesogabbro	49.80	0.79	15.13	12.35	0.22	6.97	10.56	2.59	0.49	0.05	2.20	0.01	101.14
01-RAS-043A	Cunningham	OTH-081	Grab	Melamesogabbro	49.44	0.90	14.88	12.99	0.21	6.66	10.24	2.68	0.52	0.06	2.33	0.07	100.90
01-RAS-044A	Cunningham	OTH-081	Grab	Mesogabbro	49.76	0.81	15.78	12.05	0.19	6.72	10.84	2.01	0.25	0.05	2.00	0.18	100.47
01-RAS-045A	Cunningham	OTH-081	Grab	Wehrlite-orthocumulate	48.71	0.62	14.82	13.31	0.23	8.80	9.04	1.62	0.73	0.04	3.22	0.08	101.14
01-RAS-046A	Cunningham	OTH-081	Grab	Quartz-gabbro	37.65	0.29	5.15	14.25	0.15	29.87	1.81	0.12	0.04	ND	10.50	0.02	99.83
01-RAS-047A	Cunningham	OTH-081	Grab	Wehrlite-orthocumulate	37.74	0.34	3.97	13.04	0.18	29.74	3.32	0.10	0.02	0.01	11.51	0.01	99.97
01-RAS-048A	Cunningham	OTH-081	Grab	Leucogabbro	48.24	0.30	18.91	6.51	0.10	10.57	7.81	2.01	0.77	0.02	4.35	ND	99.61
01-RAS-049A	Cunningham	OTH-081	Grab	Leucogabbro	50.47	0.61	16.33	9.43	0.16	6.59	11.41	1.54	0.78	0.06	2.70	0.10	100.08
01-RAS-050A	Garnett	OTH-081	Grab	Mesogabbro	49.63	0.73	15.84	12.45	0.20	7.10	10.86	1.82	0.42	0.05	2.39	0.03	101.50
01-RAS-051A	Garnett	OTH-081	Grab	Mesogabbro	50.81	0.84	12.41	13.38	0.19	8.60	10.09	1.87	0.35	0.06	1.85	0.57	100.45
01-RAS-052A	Garnett	OTH-081	Grab	Course-grained basalt	48.73	0.78	15.36	11.17	0.18	8.06	11.12	2.32	0.34	0.05	2.10	0.24	100.22
01-CMV-048A	Sothman	OTH-082	Grab	Dunite	34.84	0.13	2.90	15.27	0.11	31.42	2.50	0.03	0.01	ND	11.58	2.99	98.79
01-CMV-048B	Sothman	OTH-082	Grab	Dunite	31.34	0.19	3.40	20.63	0.14	25.59	3.09	0.12	0.06	ND	10.25	7.89	94.80
01-CMV-048C	Sothman	OTH-082	Grab	Lherzolite	37.15	0.17	4.31	11.54	0.15	31.99	3.84	0.03	0.01	ND	10.00	0.22	99.21
01-CMV-048D	Sothman	OTH-082	Grab	Lherzolite	39.96	0.21	4.49	9.30	0.13	33.31	4.23	0.15	0.03	ND	8.65	0.13	100.47

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-CMV-048E	Sothman	OTH-082	Grab	Porphyry dike	40.80	1.44	14.28	4.09	0.17	4.97	34.32	0.06	ND	0.31	1.01	0.03	101.44
01-CMV-048F	Sothman	OTH-082	Grab	Andesite	61.94	0.63	16.69	4.13	0.04	3.52	4.41	6.81	0.71	0.14	1.81	0.01	100.83
01-MGH-006A	Peterlong Lake	OTH-083	Grab	Gabbro to quartz-gabbro	46.27	0.95	14.91	12.52	0.18	5.55	9.45	2.44	0.02	0.05	8.83	0.05	101.17
01-MGH-007A	Peterlong Lake	OTH-083	Grab	Quartz-gabbro	48.48	1.71	12.27	19.09	0.24	3.54	5.87	2.95	0.08	0.15	7.11	0.01	101.49
01-MGH-008A	Peterlong Lake	OTH-083	Grab	Quartz-gabbro	46.68	0.92	14.53	11.83	0.19	5.88	10.64	1.25	0.05	0.06	7.50	0.03	99.53
01-MGH-009A	Peterlong Lake	OTH-083	Grab	Quartz-gabbro	49.38	0.80	15.65	12.57	0.19	6.85	10.32	2.54	0.03	0.05	2.93	0.02	101.31
01-MGH-010A	Peterlong Lake	OTH-083	Grab	Quartz-gabbro	49.84	1.34	13.29	17.04	0.21	5.62	7.67	2.87	0.09	0.09	3.34	0.01	101.42
01-MGH-011A	Peterlong Lake	OTH-083	Grab	Mesogabbro	44.58	0.59	14.68	11.63	0.17	10.20	10.38	1.57	0.03	0.03	6.15	0.02	100.00
01-MGH-012A	Peterlong Lake	OTH-083	Grab	Quartz-gabbro	48.59	1.83	13.19	16.97	0.24	3.65	9.29	0.32	ND	0.14	7.03	0.26	101.24
01-MGH-013A	Peterlong Lake	OTH-083	Grab	Mesogabbro	47.33	1.19	15.67	14.38	0.20	6.78	8.93	2.98	0.07	0.06	3.62	0.02	101.20
01-MGH-014A	Peterlong Lake	OTH-083	Grab	Leucogabbro	50.74	0.49	15.61	10.68	0.18	10.20	9.25	2.54	0.31	0.02	0.36	0.04	100.36
01-MGH-015A	Peterlong Lake	OTH-083	Grab	Lherzolite-websterite	47.77	0.53	17.32	10.14	0.17	7.69	12.99	1.58	0.06	0.04	2.60	0.03	100.88
01-MGH-016A	Peterlong Lake	OTH-083	Grab	Mesogabbro	42.23	0.56	13.43	13.82	0.19	15.13	8.60	1.24	0.06	0.03	5.08	ND	100.38
01-MGH-017A	Peterlong Lake	OTH-083	Grab	Mesogabbro	41.32	0.49	12.68	14.33	0.20	16.36	7.86	0.97	0.04	0.03	5.99	ND	100.27
01-MGH-018A	Peterlong Lake	OTH-083	Grab	Mesogabbro	42.26	0.55	15.20	11.93	0.17	11.94	8.32	2.89	0.08	0.03	6.77	0.02	100.15
01-MGH-019A	Peterlong Lake	OTH-083	Grab	Quartz-gabbro	50.23	1.38	14.05	16.69	0.25	5.45	7.44	2.78	0.09	0.09	2.64	0.09	101.10
01-MGH-029A	Dundonald	OTH-084	Grab	Mesogabbro-leucogabbro	56.83	1.27	13.60	12.30	0.20	3.46	6.34	5.04	0.12	0.14	1.94	0.28	101.23
01-MGH-030A	Dundonald	OTH-084	Grab	Leuco to mesogabbro	54.33	1.84	13.61	13.92	0.28	2.46	8.48	4.58	0.32	0.18	1.48	0.02	101.47
01-MGH-031A	Dundonald	OTH-084	Grab	Dunite	36.90	0.29	2.01	15.12	0.19	33.64	2.43	0.08	0.05	0.01	7.89	0.04	98.62
01-MGH-032A	Dundonald	OTH-084	Grab	Clinopyroxenite	50.76	0.45	3.39	9.97	0.17	17.61	17.50	0.40	0.01	0.02	1.69	ND	101.97
01-MGH-033A	Dundonald	OTH-084	Grab	Melanogabbro	50.10	0.57	4.26	11.69	0.20	15.19	17.35	0.97	ND	0.02	1.36	ND	101.71
01-MGH-033B	Dundonald	OTH-084	Grab	Clinopyroxenite	49.68	0.61	4.57	13.04	0.22	14.50	16.65	1.08	0.01	0.03	1.39	ND	101.78
01-MGH-033C	Dundonald	OTH-084	Grab	Mesogabbro	45.88	2.47	13.10	18.47	0.24	5.36	9.87	3.27	0.50	0.05	1.73	ND	100.93
01-MGH-034A	Dundonald	OTH-084	Grab	Clinopyroxenite-melagabbro	50.04	0.45	3.17	9.71	0.18	17.64	18.17	0.41	0.01	0.02	1.77	0.02	101.57
01-MGH-034B	Dundonald	OTH-084	Grab	Clinopyroxenite	50.48	0.56	3.95	11.29	0.20	15.30	17.73	0.99	0.02	0.02	1.15	0.06	101.69
01-MGH-034C	Dundonald	OTH-084	Grab	Clinopyroxenite	50.42	0.54	3.93	11.07	0.20	16.05	17.53	0.89	0.02	0.02	1.32	0.01	101.99
01-MGH-034D	Dundonald	OTH-084	Grab	Clinopyroxenite-melagabbro	49.49	0.66	4.76	12.78	0.23	14.27	16.58	1.15	0.03	0.04	1.41	0.05	101.40
01-MGH-034E	Dundonald	OTH-084	Grab	Clinopyroxenite	49.53	0.46	3.82	11.26	0.19	16.49	18.00	0.53	0.01	0.01	1.48	0.04	101.78
01-MGH-035A	Dundonald	OTH-084	Grab	Mesogabbro	50.68	1.50	13.68	17.52	0.24	2.09	9.37	4.16	0.27	0.24	1.51	0.03	101.25
01-MGH-035B	Dundonald	OTH-084	Grab	Peridotite	39.96	0.38	3.61	14.16	0.15	25.70	7.23	0.05	ND	0.02	8.19	0.17	99.46
01-MGH-035C	Dundonald	OTH-084	Grab	Clinopyroxenite	48.56	0.43	2.69	10.78	0.21	17.87	18.92	0.17	ND	ND	2.07	0.02	101.70
01-MGH-035D	Dundonald	OTH-084	Grab	Clinopyroxenite	49.47	0.36	2.27	9.14	0.24	18.38	19.99	0.18	ND	ND	1.86	0.03	101.90
01-MGH-035E	Dundonald	OTH-084	Grab	Dunite	35.29	0.16	1.25	13.54	0.17	35.73	ND	0.02	0.03	ND	11.67	ND	97.83
01-MGH-043A	Dundonald	OTH-084	Core	Wehrlite	39.94	0.42	3.12	16.20	0.21	28.01	6.00	0.10	0.02	0.02	6.15	0.05	100.19
01-MGH-043B	Dundonald	OTH-084	Core	Clinopyroxenite	47.03	0.61	4.84	11.63	0.21	16.26	17.53	0.26	ND	0.03	2.31	0.02	100.70
01-MGH-043C	Dundonald	OTH-084	Core	Wehrlite	37.72	0.33	2.32	18.32	0.22	28.33	2.95	0.09	0.08	0.01	9.27	0.04	99.64
01-MGH-043D	Dundonald	OTH-084	Core	Clinopyroxenite	48.08	0.59	4.80	11.58	0.20	16.94	15.91	0.71	0.02	0.02	2.31	0.02	101.17
01-MGH-043E	Dundonald	OTH-084	Core	Wehrlite	39.95	0.36	2.44	17.67	0.22	26.68	5.87	0.15	0.09	0.01	6.40	0.06	99.84

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	S	TOTAL
				(Detection Limit-->)	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.05%	0.01%	
01-MGH-043F	Dundonald	OTH-084	Core	Clinopyroxenite	48.51	0.49	3.78	11.61	0.20	17.64	17.10	0.25	ND	0.02	2.01	0.02	101.61
01-MGH-043G	Dundonald	OTH-084	Core	Wehrlite	38.06	0.35	2.47	18.48	0.16	26.68	2.67	0.05	0.18	0.01	9.41	0.92	98.53
01-MGH-043H	Dundonald	OTH-084	Core	Clinopyroxenite	47.96	0.57	4.59	11.31	0.20	15.86	18.60	0.23	ND	0.02	1.93	0.02	101.27
01-MGH-043I	Dundonald	OTH-084	Core	Wehrlite	37.42	0.41	2.66	14.37	0.22	31.39	3.10	0.07	0.09	0.04	9.80	0.04	99.57
01-MGH-044A	Dundonald	OTH-084	Core	Clinopyroxenite	50.23	0.51	4.01	8.73	0.15	17.61	17.19	0.80	0.01	0.03	1.83	0.02	101.10
01-MGH-044B	Dundonald	OTH-084	Core	Anorthosite	57.55	1.90	15.45	4.90	0.06	5.57	3.44	7.92	0.17	0.29	2.15	ND	99.41
01-MGH-044C	Dundonald	OTH-084	Core	Clinopyroxenite	49.34	0.52	3.52	10.90	0.20	17.10	17.37	0.43	ND	ND	2.11	0.02	101.50
01-MGH-045A	Dundonald	OTH-084	Core	Clinopyroxenite	49.53	0.54	3.75	10.82	0.19	16.45	17.54	0.72	0.01	0.03	1.79	0.01	101.35
01-MGH-045B	Dundonald	OTH-084	Core	Clinopyroxenite	49.36	0.61	4.59	10.78	0.20	14.44	17.22	1.43	0.04	0.03	1.45	0.02	100.15
01-MGH-045C	Dundonald	OTH-084	Core	Clinopyroxenite	49.39	0.77	5.56	13.40	0.22	12.56	16.43	1.62	0.02	0.03	1.37	0.09	101.39
01-CAM-001A	Mann Intrusion	OTH-085	Grab	Wehrlite or lherzolite	37.55	0.19	3.57	12.05	0.17	32.74	2.46	0.03	0.02	0.01	10.73	0.04	99.52
01-CAM-002A	Mann Intrusion	OTH-085	Grab	Wehrlite	38.76	0.09	3.55	10.42	0.13	33.78	3.09	0.04	0.02	ND	10.59	ND	100.48
01-CAM-003A	Mann Intrusion	OTH-085	Grab	Websterite	44.38	0.15	5.31	7.37	0.14	23.06	14.85	0.07	ND	ND	5.20	0.04	100.54
01-CAM-004A	Mann Intrusion	OTH-085	Grab	Clinopyroxenite	49.13	0.20	3.39	7.72	0.18	19.30	18.92	0.19	0.04	ND	2.45	ND	101.52
01-CAM-005A	Mann Intrusion	OTH-085	Grab	Peridotite to lherzolite	38.61	0.16	4.08	12.40	0.13	32.09	3.40	0.09	0.02	ND	9.68	ND	100.67
01-CAM-006A	Mann Intrusion	OTH-085	Grab	Peridotite to lherzolite	37.81	0.13	3.76	10.55	0.15	33.77	2.57	0.03	ND	ND	10.76	ND	99.54
01-CAM-006B	Mann Intrusion	OTH-085	Core	Peridotite to wehrlite	41.20	0.15	5.67	10.43	0.17	28.87	5.70	0.15	0.05	ND	8.26	0.01	100.66
01-CAM-007A	Mann Intrusion	OTH-085	Core	Peridotite to wehrlite	40.59	0.16	5.45	8.54	0.13	30.22	5.69	0.15	0.03	ND	8.84	0.02	99.80
01-CAM-008A	Mann Intrusion	OTH-085	Core	Wehrlite	41.80	0.19	6.27	8.81	0.13	28.89	5.81	0.27	0.10	ND	7.88	0.01	100.16
01-CAM-009A	Mann Intrusion	OTH-085	Core	Wehrlite	41.13	0.17	5.34	9.47	0.13	29.90	4.58	0.19	0.06	ND	9.12	0.01	100.11
01-CAM-010A	Mann Intrusion	OTH-085	Core	Gabbro	48.03	0.42	15.74	8.34	0.14	10.56	11.45	2.16	0.39	0.02	3.57	ND	100.81
01-CAM-011A	Mann Intrusion	OTH-085	Core	Gabbro	51.73	1.08	13.42	12.41	0.18	5.64	9.00	5.16	0.17	0.07	2.62	ND	101.48
01-CAM-012A	Mann Intrusion	OTH-085	Core	Quartz-gabbro	51.27	1.79	11.93	17.58	0.19	6.09	6.23	2.70	0.34	0.11	3.20	0.01	101.44
01-CAM-013A	Mann Intrusion	OTH-085	Core	Metagabbro to metadiorite	51.28	1.73	11.60	17.40	0.19	3.69	7.85	2.82	0.44	0.13	4.05	ND	101.20
01-CAM-014A	Mann Intrusion	OTH-085	Core	Gabbro?	49.28	0.93	13.46	14.23	0.22	6.59	10.64	2.01	0.21	0.06	3.70	ND	101.32
01-CAM-015A	Mann Intrusion	OTH-085	Core	Metagabbro to metaqz-gabbro	53.78	0.91	13.86	12.75	0.18	5.18	9.39	2.62	0.24	0.06	2.18	ND	101.17
01-CAM-016A	Mann Intrusion	OTH-085	Core	Gabbronorite to opx-gabbro	51.14	0.49	13.10	13.57	0.19	8.11	9.73	2.13	0.49	0.04	2.57	0.02	101.56
01-CAM-017A	Mann Intrusion	OTH-085	Core	Gabbro or mesogabbro	49.41	0.70	15.22	12.88	0.18	7.23	8.97	3.66	0.29	0.05	2.62	0.01	101.21
01-CAM-018A	Mann Intrusion	OTH-085	Core	Peridotite or pyroxenite	43.39	0.06	25.02	3.99	0.07	7.21	13.11	1.78	0.26	ND	4.30	ND	99.22
01-MGH-001A	Mann Intrusion	OTH-085	Core	Lherzolite	39.24	0.19	3.71	9.14	0.10	35.44	2.33	0.06	0.05	ND	10.00	0.04	100.26
01-MGH-001B	Mann Intrusion	OTH-085	Core	Mesogabbro-leucogabbro	52.16	0.76	17.41	7.87	0.11	4.43	6.89	3.71	1.21	0.22	5.22	0.11	100.00
01-MGH-002A	Mann Intrusion	OTH-085	Core	Lherzolite	39.13	0.19	3.79	9.16	0.12	35.46	2.46	0.09	0.05	ND	9.42	0.08	99.88
01-MGH-002B	Mann Intrusion	OTH-085	Core	Mesogabbro	38.24	0.16	4.05	7.89	0.21	22.68	11.71	0.04	0.01	ND	15.44	0.13	100.44
01-MGH-002C	Mann Intrusion	OTH-085	Core	Peridotite	51.99	0.72	16.84	7.48	0.12	4.36	7.28	3.75	1.16	0.21	6.09	0.06	99.99
01-MGH-003A	Mann Intrusion	OTH-085	Core	Lherzholite-wehrlite	38.72	0.19	3.56	11.99	0.16	33.77	2.45	0.09	0.06	ND	8.29	0.11	99.29
01-MGH-003B	Mann Intrusion	OTH-085	Core	Mesogabbro	42.74	0.56	14.91	8.56	0.14	12.09	17.00	0.54	0.63	0.12	2.89	0.01	100.16
01-MGH-003C	Mann Intrusion	OTH-085	Core	Lherzolite-harburgite	38.05	0.17	3.51	11.87	0.16	34.51	2.25	0.12	0.06	ND	7.95	0.06	98.66
01-MGH-003D	Mann Intrusion	OTH-085	Core	Lherzolite	36.57	0.14	2.44	8.57	0.12	37.30	0.73	0.01	0.03	ND	12.41	0.02	98.32

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	S	TOTAL
				(Detection Limit-->)	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.05%	0.01%	
01-MGH-003E	Mann Intrusion	OTH-085	Core	Gabbro-lherzolite (harzburgite)	36.80	0.22	7.81	11.18	0.17	25.58	10.88	0.03	0.02	ND	8.00	0.02	100.68
01-MGH-004A	Mann Intrusion	OTH-085	Core	Dunite	35.81	0.11	2.28	9.70	0.12	37.20	1.41	0.03	ND	ND	13.03	0.01	99.69
01-MGH-004B	Mann Intrusion	OTH-085	Core	Dunite	36.54	0.12	2.49	5.59	0.11	39.41	0.82	0.02	ND	ND	13.25	ND	98.35
01-MGH-004D	Mann Intrusion	OTH-085	Core	Dunite-lherzolite	39.86	0.17	2.89	5.43	0.13	34.95	5.31	0.05	ND	ND	10.92	ND	99.72
01-MGH-004E	Mann Intrusion	OTH-085	Core	Lherzolite	38.05	0.19	4.07	8.67	0.12	33.20	5.08	0.02	ND	ND	10.15	0.01	99.56
01-MGH-005A	Mann Intrusion	OTH-085	Core	Lherzolite	39.40	0.25	4.39	11.91	0.17	30.63	3.54	0.32	0.05	0.01	8.68	0.02	99.35
01-MGH-005B	Mann Intrusion	OTH-085	Core	Peridotite	34.55	0.17	2.96	9.38	0.14	30.42	3.48	0.02	ND	0.01	18.44	0.05	99.56
01-MGH-005C	Mann Intrusion	OTH-085	Core	Dunite	37.92	0.16	2.83	9.27	0.15	35.08	2.66	0.02	0.03	ND	11.03	0.01	99.14
01-RAS-001A	Mann Intrusion	OTH-085	Core	Mesogabbro-leucogabbro	49.86	0.35	14.86	8.18	0.17	9.61	13.80	1.28	0.24	0.02	2.58	0.02	100.95
01-RAS-002A	Mann Intrusion	OTH-085	Core	Peridotite	37.34	0.21	3.36	10.81	0.15	33.44	3.33	0.02	0.01	0.01	10.91	0.01	99.60
01-RAS-003A	Mann Intrusion	OTH-085	Core	Peridotite	35.73	0.16	3.13	10.09	0.15	34.24	1.92	0.02	0.03	ND	11.05	0.01	96.53
01-RAS-004A	Mann Intrusion	OTH-085	Core	Dunite	36.89	0.20	3.90	11.24	0.16	33.38	3.29	0.07	0.04	ND	7.57	0.01	96.75
01-RAS-005A	Mann Intrusion	OTH-085	Core	Dunite	36.99	0.18	3.61	10.95	0.14	34.26	2.85	0.05	0.05	ND	8.61	0.02	97.71
01-RAS-006A	Mann Intrusion	OTH-085	Core	Dunite	38.45	0.17	3.76	12.00	0.16	34.15	3.70	0.07	0.05	ND	7.47	0.02	100.00
01-RAS-007A	Garrison Intrusion	OTH-086	Grab	Dunite	37.39	0.11	1.96	6.29	0.12	38.87	ND	0.02	ND	ND	13.33	ND	98.05
01-RAS-008A	Garrison Intrusion	OTH-086	Grab	Dunite	38.62	0.13	2.57	3.60	0.10	39.86	ND	0.02	ND	ND	13.95	ND	98.82
01-RAS-009A	Garrison Intrusion	OTH-086	Grab	Dunite	35.49	0.11	1.78	10.97	0.12	37.17	ND	0.02	ND	ND	12.63	ND	98.27
01-RAS-010A	Garrison Intrusion	OTH-086	Grab	Lherzolite	35.69	0.21	3.34	16.32	0.19	30.02	4.94	0.03	ND	0.03	8.95	0.02	99.71
01-RAS-011A	Garrison Intrusion	OTH-086	Grab	Clinopyroxenite	43.08	0.24	4.35	8.15	0.19	23.21	14.43	0.12	ND	0.01	4.79	0.06	98.56
01-RAS-012A	Garrison Intrusion	OTH-086	Grab	Mesogabbro	46.44	0.22	10.78	8.93	0.14	16.84	13.70	0.39	0.04	ND	3.29	0.44	100.78
01-RAS-013A	Garrison Intrusion	OTH-086	Grab	Mesogabbro	49.17	0.40	17.50	7.71	0.14	9.26	11.80	1.93	0.21	0.03	3.01	0.01	101.15
01-RAS-014A	Garrison Intrusion	OTH-086	Grab	Mesogabbro	49.54	1.71	13.91	9.15	0.18	4.89	16.76	1.11	0.03	0.07	3.07	0.02	100.42
01-RAS-015A	Garrison Intrusion	OTH-086	Grab	Hornblende-gabbro	49.50	0.77	14.20	12.92	0.24	7.75	10.26	2.58	0.38	0.05	2.58	0.01	101.24
01-RAS-016A	Garrison Intrusion	OTH-086	Grab	Mesogabbro	51.78	2.29	12.72	18.71	0.25	3.11	6.77	4.07	0.43	0.19	0.87	0.02	101.19
01-RAS-017A	Garrison Intrusion	OTH-086	Grab	Mesogabbro	48.54	1.87	13.93	17.86	0.22	4.89	8.13	3.67	0.62	0.11	1.43	0.02	101.27
01-RAS-018A	Garrison Intrusion	OTH-086	Grab	Metagabbro	47.49	1.74	13.94	17.39	0.24	5.42	9.86	2.72	0.50	0.09	1.48	0.02	100.88
01-RAS-019A	Garrison Intrusion	OTH-086	Grab	Wehrlite	38.68	0.20	4.63	13.08	0.18	29.10	4.36	0.17	0.04	0.03	9.82	0.14	100.29
01-RAS-020A	Garrison Intrusion	OTH-086	Grab	Pegmatoidal metagabbro	48.72	0.34	11.75	7.32	0.14	13.33	14.02	1.46	0.77	0.02	2.74	0.01	100.60
01-RAS-021A	Garrison Intrusion	OTH-086	Grab	Mesogabbro	48.74	0.59	15.10	10.94	0.21	8.39	11.38	2.41	0.68	0.04	2.83	0.03	101.33
01-RAS-111A	Centre Hill	OTH-087	Grab	Clinopyroxenite	50.62	0.58	4.47	10.57	0.18	15.92	16.62	0.96	0.17	0.03	0.96	0.01	101.08
01-RAS-112A	Centre Hill	OTH-087	Grab	Dunite	36.30	0.23	1.43	15.71	0.20	32.67	2.25	0.02	ND	ND	10.12	0.03	98.92
01-RAS-113A	Centre Hill	OTH-087	Grab	Dunite	38.49	0.28	2.18	15.63	0.22	31.41	3.00	0.04	ND	0.01	8.94	0.01	100.20
01-RAS-114A	Centre Hill	OTH-087	Grab	Clinopyroxenite	47.41	0.34	3.05	8.63	0.17	19.22	18.58	0.22	ND	0.01	2.22	0.03	99.84
01-RAS-115A	Centre Hill	OTH-087	Grab	Dunite	36.56	0.29	1.74	17.08	0.19	31.29	2.77	0.02	ND	0.01	9.20	0.03	99.15
01-RAS-116A	Centre Hill	OTH-087	Grab	Clinopyroxenite	49.51	0.41	3.20	10.20	0.17	18.69	17.43	0.30	0.01	0.01	1.45	0.06	101.38
01-RAS-117A	Centre Hill	OTH-087	Grab	Clinopyroxenite	50.69	0.52	3.46	10.20	0.19	15.92	18.18	0.79	0.11	0.01	0.67	ND	100.74
01-RAS-118A	Centre Hill	OTH-087	Grab	Clinopyroxenite	49.74	0.62	4.38	11.84	0.20	14.68	17.12	1.05	0.08	0.02	0.80	0.01	100.53
01-RAS-119A	Centre Hill	OTH-087	Grab	Clinopyroxenite	51.12	0.45	2.90	10.32	0.20	16.12	19.41	0.60	0.03	ND	0.78	ND	101.93

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	S	TOTAL
				(Detection Limit-->)	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.05%	0.01%	
01-RAS-119B	Centre Hill	OTH-087	Grab	Leucogabbro	52.80	1.73	14.14	8.25	0.16	6.01	10.26	5.47	0.09	0.13	1.78	0.06	100.82
01-RAS-119C	Centre Hill	OTH-087	Grab	Melagabbro	50.72	0.82	6.15	12.02	0.20	12.66	15.25	2.13	0.13	0.07	0.80	0.01	100.95
01-RAS-120A	Centre Hill	OTH-087	Grab	Mesogabbro-clinopyroxenite	51.83	0.72	5.85	10.90	0.19	12.87	16.32	2.02	0.14	0.04	0.50	ND	101.38
01-RAS-121A	Centre Hill	OTH-087	Grab	Clinopyroxenite	49.67	0.75	5.57	11.81	0.18	15.11	15.54	1.22	0.10	0.03	1.21	0.08	101.19
01-RAS-122A	Centre Hill	OTH-087	Grab	Metagabbro	46.79	0.67	13.27	9.99	0.14	11.57	12.31	1.86	0.64	0.04	1.90	0.01	99.18
01-RAS-123A	Centre Hill	OTH-087	Grab	Clinopyroxenite	46.40	0.62	4.90	17.22	0.25	17.10	11.74	0.42	0.05	0.05	2.34	0.07	101.09
01-RAS-124A	Centre Hill	OTH-087	Grab	Melagabbro	47.84	0.77	15.35	14.07	0.20	7.99	10.87	2.55	0.28	0.04	1.20	0.07	101.16
01-RAS-125A	Centre Hill	OTH-087	Grab	Leucogabbro	55.42	1.57	13.23	14.27	0.20	1.61	7.13	5.95	0.20	0.26	1.41	ND	101.25
01-RAS-126A	Centre Hill	OTH-087	Grab	Mesogabbro	52.95	1.77	13.73	18.29	0.28	1.80	6.20	5.29	0.25	0.32	0.47	0.02	101.35
01-RAS-127A	Centre Hill	OTH-087	Grab	Leucogabbro	46.78	1.39	15.87	16.89	0.19	5.86	4.92	4.54	0.43	0.11	4.14	0.22	101.12
01-RAS-128A	Centre Hill	OTH-087	Grab	Mesogabbro	50.58	1.67	14.72	16.82	0.31	5.05	5.42	3.98	0.67	0.14	1.73	0.85	101.09
01-RAS-129A	Centre Hill	OTH-087	Grab	Basalt dike or chilled margin	45.87	0.98	8.06	15.55	0.19	15.72	9.23	1.00	0.05	0.06	3.83	0.04	100.54
01-RAS-130A	Centre Hill	OTH-087	Grab	Hyaloclastite	46.02	0.91	8.09	15.23	0.30	13.22	11.38	1.40	0.12	0.06	3.84	0.05	100.57
01-MGH-020A	Munro	OTH-088	Grab	Dunite	37.36	0.16	2.73	9.58	0.12	36.76	0.88	0.01	ND	ND	11.85	0.10	99.46
01-MGH-021A	Munro	OTH-088	Grab	Dunite	35.89	0.12	2.29	9.44	0.12	37.54	ND	0.01	ND	ND	12.56	0.10	97.90
01-MGH-022A	Munro	OTH-088	Grab	Metamesogabbro	51.48	0.79	13.81	12.54	0.21	6.52	10.77	2.86	0.34	0.06	1.93	0.05	101.29
01-MGH-022B	Munro	OTH-088	Grab	Mesogabbro	50.63	0.85	14.06	13.20	0.21	6.39	10.10	2.42	0.64	0.07	2.09	0.19	100.65
01-MGH-023A	Munro	OTH-088	Grab	Dunite	36.71	0.17	2.98	9.65	0.14	36.20	0.78	0.01	ND	ND	11.51	0.08	98.16
01-MGH-024A	Munro	OTH-088	Grab	Mesogabbro	50.50	0.88	13.36	14.30	0.24	7.08	9.96	2.76	0.21	0.06	2.14	0.21	101.50
01-MGH-025A	Munro	OTH-088	Grab	Mesogabbro	50.20	1.25	14.18	15.20	0.23	5.87	9.72	2.46	0.90	0.13	1.29	0.10	101.43
01-MGH-026A	Munro	OTH-088	Grab	lherzolite-dunite	40.51	0.19	3.47	10.29	0.07	33.90	0.29	0.03	ND	ND	10.34	0.25	99.09
01-MGH-027A	Munro	OTH-088	Grab	Lherzolite-dunite	36.14	0.13	2.48	12.05	0.04	35.28	ND	0.02	ND	ND	11.68	0.14	97.82
01-MGH-027B	Munro	OTH-088	Grab	Lherzolite-dunite	36.49	0.17	2.93	11.43	0.05	35.26	ND	0.02	ND	ND	11.53	0.26	97.83
01-MGH-027C	Munro	OTH-088	Grab	Lherzolite	40.26	0.45	3.38	15.35	0.13	29.44	1.38	0.12	0.01	0.03	8.39	0.04	98.95
01-MGH-027D	Munro	OTH-088	Grab	Melagabbro-clinopyroxenite	51.70	0.60	4.29	9.57	0.17	15.95	16.38	1.32	ND	0.01	1.23	ND	101.25
01-MGH-027E	Munro	OTH-088	Grab	Clinopyroxenite-melagabbro	50.16	0.81	6.32	13.14	0.21	12.03	14.75	2.13	0.02	0.05	1.18	0.25	100.80
01-MGH-027F	Munro	OTH-088	Grab	Melagabbro	48.30	1.11	9.40	14.83	0.20	9.19	9.44	3.40	0.15	0.07	4.82	0.02	100.91
01-MGH-028A	Munro	OTH-088	Grab	Mesogabbro	46.87	1.41	15.04	16.21	0.21	5.25	9.78	3.37	0.35	0.07	2.93	0.03	101.48
01-MGH-046A	Munro	OTH-088	Grab	Dunite-lherzolite	39.11	0.23	3.79	14.35	0.18	29.79	2.16	0.02	ND	0.01	9.66	ND	99.30
01-MGH-046B	Munro	OTH-088	Grab	Melagabbro	45.97	0.34	7.86	9.79	0.21	18.44	14.48	0.32	0.02	0.01	3.39	0.02	100.84
01-MGH-046C	Munro	OTH-088	Grab	Mesogabbro	48.08	0.36	17.01	8.00	0.15	8.77	14.14	1.68	0.12	0.02	2.79	0.01	101.12
01-MGH-046D	Munro	OTH-088	Grab	Mesogabbro	52.54	1.07	12.90	14.66	0.22	5.71	9.60	2.26	0.24	0.08	1.73	0.21	101.01
01-MGH-046E	Munro	OTH-088	Grab	Mesogabbro	50.53	1.08	9.28	14.29	0.23	9.46	11.91	2.48	0.23	0.08	1.40	0.46	100.96
01-ERD-108A	Lake Abitibi	OTH-089	Grab	Metagabbronorite to ol.-gabbro	48.14	0.66	21.36	8.34	0.12	7.18	11.12	2.26	0.17	0.09	1.62	0.05	101.05
01-ERD-109A	Lake Abitibi	OTH-089	Grab	Metagabbro	44.86	2.43	17.03	14.89	0.15	6.57	10.95	2.26	0.18	0.03	1.60	0.18	100.95
01-ERD-110A	Lake Abitibi	OTH-089	Grab	Meta-olivine-gabbronorite	43.77	3.26	14.36	18.18	0.17	6.59	10.98	1.98	0.19	0.08	0.63	0.31	100.19
01-RAS-131A	Ghost Range	OTH-090	Grab	Wehrlite	37.66	0.10	5.03	12.59	0.16	30.87	3.75	0.04	0.01	ND	9.82	0.01	100.03
01-RAS-132A	Ghost Range	OTH-090	Grab	Clinopyroxenite	47.61	0.28	5.87	8.28	0.16	19.65	15.14	0.50	0.01	0.01	3.17	ND	100.68

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-RAS-133A	Ghost Range	OTH-090	Grab	Mesogabbro	46.35	0.18	15.55	5.56	0.10	12.66	14.28	1.34	0.88	0.01	3.56	ND	100.47
01-RAS-134A	Ghost Range	OTH-090	Grab	Melagabbro	47.82	0.20	16.23	5.60	0.11	10.82	15.62	1.32	0.42	0.01	2.70	0.04	100.85
01-RAS-135A	Ghost Range	OTH-090	Grab	Mesogabbro	49.09	0.21	16.89	5.34	0.11	9.51	16.09	1.55	0.18	0.01	2.01	0.02	100.99
01-RAS-136A	Ghost Range	OTH-090	Grab	Mesogabbro	51.62	1.74	13.43	17.47	0.26	3.15	7.16	3.24	0.80	0.12	2.33	0.03	101.32
01-RAS-137A	Ghost Range	OTH-090	Grab	Mesogabbro	49.80	0.45	18.07	8.14	0.15	6.90	11.46	2.70	0.51	0.04	2.57	0.06	100.79
01-RAS-138A	Ghost Range	OTH-090	Grab	Mesogabbro	50.44	0.52	17.54	9.13	0.17	5.81	10.78	3.09	0.88	0.05	2.43	0.01	100.84
01-RAS-139A	Ghost Range	OTH-090	Grab	Mesogabbro	52.15	0.95	14.62	13.20	0.20	5.80	8.72	2.91	0.64	0.08	2.16	0.01	101.43
01-RAS-140A	Ghost Range	OTH-090	Grab	Mesogabbro	47.94	1.31	13.98	16.94	0.20	5.39	9.98	2.28	0.56	0.06	2.11	0.16	100.75
01-MGH-047A	Nordica-Watabeag	OTH-091	Grab	Melagabbro	40.80	0.08	19.60	9.08	0.12	12.64	10.54	1.12	1.11	ND	3.42	0.76	98.51
01-MGH-047B	Nordica-Watabeag	OTH-091	Grab	Chromitite	18.62	0.86	17.70	21.65	0.28	11.52	4.96	0.62	0.25	ND	0.40	0.02	76.86
01-MGH-048A	Nordica-Watabeag	OTH-091	Grab	Mesogabbro	43.95	0.09	23.85	5.58	0.08	8.08	10.80	1.35	2.20	ND	4.04	0.05	100.03
01-MGH-048B	Nordica-Watabeag	OTH-091	Grab	Pyroxenite	49.72	1.02	2.88	15.76	0.23	15.63	12.30	0.65	0.04	ND	0.97	0.97	99.20
01-MGH-048C	Nordica-Watabeag	OTH-091	Grab	Mesogabbro	40.95	0.08	18.90	8.45	0.12	15.02	10.10	0.95	0.74	ND	4.44	0.08	99.75
01-MGH-049A	Nordica-Watabeag	OTH-091	Grab	Peridotite?	39.65	0.24	5.12	15.41	0.13	27.17	3.93	0.13	0.02	ND	6.93	0.12	98.74
01-MGH-049B	Nordica-Watabeag	OTH-091	Grab	Peridotite?	38.23	0.23	8.93	12.93	0.13	25.31	4.52	0.12	0.87	ND	6.31	0.04	97.58
01-MGH-049C	Nordica-Watabeag	OTH-091	Grab	Mesogabbro	45.82	0.20	18.14	10.34	0.15	9.46	9.96	2.08	1.90	ND	1.92	0.45	99.97
01-MGH-049D	Nordica-Watabeag	OTH-091	Grab	Metagabbro	47.19	0.26	16.90	9.09	0.15	10.68	9.87	1.86	1.26	ND	2.45	0.03	99.70
01-MGH-049E	Nordica-Watabeag	OTH-091	Grab	Mesogabbro	43.76	0.13	18.63	8.06	0.14	13.04	10.11	1.22	1.22	ND	3.85	0.01	100.17
01-CAM-196A	Tisdale Peridotite	OTH-092	Grab	Peridotite	41.14	0.51	7.06	14.24	0.20	25.11	5.48	0.06	0.03	0.05	6.33	0.06	100.22
01-CAM-190A	Otto Stock	OTH-093	Grab	Pyroxenite	40.42	1.54	5.35	15.37	0.29	11.08	16.06	1.23	2.66	3.01	1.46	0.06	98.47
01-CAM-191A	Otto Stock	OTH-093	Grab	Alk.fp-syen. to qz-alk. fp-syen.	65.47	0.11	18.03	1.13	0.02	0.24	0.78	6.43	7.28	0.05	0.58	0.08	100.12
01-CAM-192A	Otto Stock	OTH-093	Grab	Syenite	61.31	0.32	17.26	3.47	0.06	2.02	2.45	7.06	4.79	0.11	1.10	0.01	99.94
01-CAM-192B	Otto Stock	OTH-093	Grab	Granite to syenite	59.29	0.44	14.38	4.98	0.10	3.37	4.79	5.54	4.92	0.38	1.06	0.15	99.24
01-CAM-193A	Otto Stock	OTH-093	Grab	Pyroxenite	45.38	1.30	9.84	12.98	0.20	12.60	11.03	2.64	1.91	0.36	1.29	0.02	99.52
01-CAM-194A	Otto Stock	OTH-093	Grab	Pyroxene-hornblende-gabbro	47.57	1.03	9.68	10.28	0.14	13.15	8.77	2.53	4.41	0.27	1.20	0.06	99.03
01-CAM-195A	Otto Stock	OTH-093	Grab	Pyroxenite	45.97	0.82	4.73	13.54	0.28	10.12	16.86	2.50	1.92	1.78	1.08	0.06	99.61
01-CAM-197A	Otto Stock	OTH-093	Grab	Qz-alk. fp-syenite to qz-syenite	68.04	0.14	16.00	1.47	0.03	0.78	0.97	7.00	5.05	0.04	0.55	0.02	100.06
01-CAM-198A	Otto Stock	OTH-093	Grab	Alkali feldspar-syenite	53.05	0.76	13.98	6.42	0.16	4.40	6.52	2.26	7.81	0.81	2.27	0.07	98.45
01-CAM-199A	Otto Stock	OTH-093	Grab	Lamprophyre dike	51.20	0.80	12.08	8.93	0.19	8.48	8.12	4.62	2.05	0.43	3.42	0.10	100.34
01-RAS-297A	James Lake Dike	OTH-094	Grab	Melamesogabbro	48.08	0.82	12.30	12.06	0.19	10.49	9.35	2.03	1.38	0.07	2.70	0.11	99.46
01-RAS-298A	James Lake Dike	OTH-094	Grab	Melamesogabbro	46.92	0.45	6.53	14.18	0.24	14.89	11.61	1.00	0.17	0.08	2.74	1.12	98.80
01-RAS-299A	James Lake Dike	OTH-094	Grab	Melagabbro	9.91	0.06	0.51	63.79	0.04	1.06	1.36	ND	0.03	ND	28.62	35.30	105.25
01-RAS-300A	James Lake Dike	OTH-094	Grab	Massive sulphides	48.94	0.78	12.21	11.60	0.23	9.96	9.08	2.50	0.96	0.06	2.76	0.29	99.06
01-RAS-291A	James Lake Gabbro	OTH-095	Grab	Mesogabbro	49.45	0.80	12.58	11.65	0.18	8.91	11.18	2.07	0.81	0.07	1.92	0.10	99.62
01-RAS-292A	James Lake Gabbro	OTH-095	Grab	Mesogabbro-melagabbro	48.48	0.70	11.53	11.34	0.21	10.46	11.99	1.71	0.89	0.05	2.03	0.09	99.40
01-RAS-293A	James Lake Gabbro	OTH-095	Grab	Pyroxenite now hornblendite	47.36	0.67	13.89	16.84	0.24	7.82	7.72	2.98	0.88	0.01	2.07	0.01	100.49
01-RAS-294A	James Lake Gabbro	OTH-095	Grab	Footwall basalt with trace sul	50.20	0.81	20.22	10.60	0.14	2.07	5.78	4.15	1.79	0.33	2.56	1.32	98.63
01-RAS-295A	James Lake Gabbro	OTH-095	Grab	Pyroxenite	41.45	1.21	8.59	19.70	0.29	14.94	8.63	0.48	0.07	0.03	3.61	0.27	98.99

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-RAS-296A	James Lake Gabbro	OTH-095	Grab	Mesogabbro	45.41	2.23	15.05	14.60	0.29	6.85	9.64	2.25	1.07	0.07	2.29	0.43	99.75
01-ERD-097A	Copperfields-Miles	OTH-096	Grab	Meta-anorthosite/metaleucogab.	50.70	1.27	21.41	7.86	0.10	2.42	9.76	4.48	0.76	0.11	0.58	0.28	99.45
01-ERD-097B	Copperfields-Miles	OTH-096	Grab	Felsic qz-feldspar crystal tuff	62.55	0.44	15.28	3.52	0.06	1.67	3.81	4.09	1.73	0.14	6.80	ND	100.09
01-ERD-098A	Copperfields-Miles	OTH-096	Grab	Felsic quartz crystal tuff	66.80	0.36	15.35	1.78	0.06	1.51	2.99	3.15	2.28	0.11	5.56	0.25	99.95
01-ERD-099A	Copperfields-Miles	OTH-096	Grab	Intermediate lithic crystal tuff	56.37	0.55	13.42	6.34	0.08	8.44	4.33	2.64	0.91	0.15	7.36	ND	100.59
01-ERD-100A	Copperfields-Miles	OTH-096	Grab	Mafic to intermediate tuff	57.74	0.66	15.27	6.76	0.10	7.44	2.75	4.91	0.61	0.17	4.62	ND	101.04
01-ERD-101A	Copperfields-Miles	OTH-096	Grab	Mafic-int. crystal lithic tuff	56.61	0.60	14.18	6.78	0.10	7.95	4.65	3.71	0.89	0.17	3.41	ND	99.05
01-ERD-102A	Copperfields-Miles	OTH-096	Grab	Fel. to int. crystal tuff	69.90	0.44	14.48	4.70	0.05	1.79	0.49	4.90	1.29	0.05	2.15	ND	100.24
01-ERD-103A	Copperfields-Miles	OTH-096	Grab	Intermediate crystal tuff	54.13	0.70	16.21	8.05	0.12	8.68	3.99	3.07	2.19	0.18	3.89	ND	101.20
01-ERD-104A	Copperfields-Miles	OTH-096	Grab	Granite to syenite	74.53	0.81	12.29	6.29	0.04	2.18	0.23	1.00	0.70	0.12	2.84	0.01	101.01
01-ERD-105A	Copperfields-Miles	OTH-096	Grab	Metagabbro	45.65	1.52	20.34	11.73	0.11	3.95	7.20	3.63	0.38	0.02	6.57	0.02	101.09
01-ERD-106A	Copperfields-Miles	OTH-096	Grab	Metasedimentary or metavolc.	74.35	0.66	12.84	3.09	0.05	0.96	2.50	1.61	1.01	0.08	3.82	0.07	100.96
01-ERD-107A	Copperfields-Miles	OTH-096	Grab	Mafic metavolcanic	45.55	0.98	17.50	13.24	0.14	7.17	10.10	1.11	1.44	0.02	3.81	0.02	101.06
01-RAS-301A	Copperfields-Miles	OTH-096	Grab	Quartz-gabbro	47.55	0.57	21.44	12.60	0.06	3.07	7.54	3.68	0.11	0.17	3.34	1.55	100.15
01-RAS-302A	Copperfields-Miles	OTH-096	Grab	Leucogabbro?	42.22	0.95	17.87	10.07	0.10	4.80	9.01	2.57	0.52	0.03	11.05	0.16	99.20
01-RAS-303A	Copperfields-Miles	OTH-096	Core	Mesogabbro	44.33	0.81	19.67	8.91	0.10	4.49	11.88	2.91	0.07	0.04	6.58	0.20	99.80
01-RAS-304A	Copperfields-Miles	OTH-096	Core	Quartz-mesogabbro	44.20	0.96	19.46	13.84	0.09	4.74	10.58	1.19	0.04	0.04	3.49	1.60	98.63
01-RAS-305A	Copperfields-Miles	OTH-096	Core	Mesogabbro	46.33	0.84	17.90	11.41	0.10	5.16	11.44	1.01	0.02	0.03	4.48	0.68	98.73
01-RAS-306A	Copperfields-Miles	OTH-096	Core	Quartz-mesogabbro	45.20	0.84	19.81	11.64	0.09	4.67	10.99	2.00	0.05	0.05	4.53	0.77	99.87
01-RAS-307A	Copperfields-Miles	OTH-096	Core	Quartz-mesogabbro	44.20	1.01	17.89	9.29	0.12	4.59	11.86	2.85	0.29	0.02	8.63	0.11	100.75
01-RAS-308A	Copperfields-Miles	OTH-096	Core	Mesogabbro-leucogabbro	41.34	0.60	17.01	13.57	0.13	5.77	8.26	3.63	0.26	0.03	8.97	0.93	99.56
01-RAS-309A	Copperfields-Miles	OTH-096	Core	Semi-massive sul in leucogabbro to quartz-gabbro	41.95	1.29	15.04	12.66	0.16	4.99	9.68	2.46	0.45	0.03	9.90	0.48	98.60
01-RAS-310A	Copperfields-Miles	OTH-096	Core	Semi-massive sul in leucogabbro?	41.88	0.72	12.81	19.88	0.12	5.01	7.92	0.50	0.06	0.05	7.23	2.21	96.17
01-RAS-311A	Copperfields-Miles	OTH-096	Core	Quartz-gabbro to diorite	31.22	0.55	9.62	28.87	0.16	5.02	10.42	ND	0.04	0.03	5.27	9.47	90.98
01-RAS-312A	Copperfields-Miles	OTH-096	Core	Mesogabbro to quartz-gabbro	41.68	0.79	15.47	16.40	0.17	6.12	7.86	2.50	0.10	0.03	6.95	2.12	98.09
01-RAS-313A	Copperfields-Miles	OTH-096	Core	Mesogabbro?	40.92	1.06	12.73	24.44	0.15	6.60	5.30	ND	0.02	0.04	6.00	3.21	97.11
01-RAS-314A	Copperfields-Miles	OTH-096	Core	Semi-massive sul in qz-gabbro?	34.64	0.33	10.25	39.26	0.06	2.63	0.13	ND	0.02	0.08	12.81	14.60	99.69
01-RAS-315A	Copperfields-Miles	OTH-096	Core	Quartz-gabbro	21.74	0.21	5.75	49.94	0.03	1.71	0.06	ND	0.02	0.04	20.75	26.60	99.12
01-CMV-038A	Caribou Lake	OTH-097	Grab	Olivine-gabbronorite	46.80	0.42	18.09	9.64	0.15	12.09	10.37	2.40	0.45	0.03	0.18	0.04	100.63
01-CMV-039A	Caribou Lake	OTH-097	Grab	Olivine-gabbronorite	43.06	0.33	9.82	11.73	0.18	25.07	6.38	1.17	0.23	0.02	2.59	0.12	100.58
01-CMV-040A	Caribou Lake	OTH-097	Grab	Metagabbro	50.41	0.42	19.48	7.99	0.13	8.35	9.02	2.90	0.59	0.03	1.06	0.02	100.37
01-CMV-041A	Caribou Lake	OTH-097	Grab	Metagabbro	49.69	0.33	17.50	8.99	0.14	10.44	8.82	2.55	0.28	0.03	0.66	0.05	99.44
01-CMV-042A	Caribou Lake	OTH-097	Grab	Norite	51.23	0.47	15.94	10.85	0.18	10.93	8.24	2.52	0.32	0.01	0.17	0.08	100.86
01-CMV-043A	Caribou Lake	OTH-097	Grab	Gabbronorite	51.96	0.66	17.56	10.37	0.17	7.74	8.63	2.99	0.59	0.09	0.52	0.03	101.28
01-CMV-044A	Caribou Lake	OTH-097	Grab	Gabbronorite	51.52	0.96	16.68	11.67	0.19	7.77	8.73	2.76	0.61	0.08	0.54	0.04	101.52
01-CMV-045A	Caribou Lake	OTH-097	Grab	Gabbronorite	46.59	1.30	15.99	16.24	0.18	6.49	9.18	2.86	0.35	0.03	1.21	1.39	100.42
01-CMV-046A	Caribou Lake	OTH-097	Grab	Gabbronorite	48.12	5.07	15.03	14.86	0.25	5.64	8.20	3.16	0.48	0.04	0.05	0.03	100.91
01-CMV-047A	Caribou Lake	OTH-097	Grab	Pegmatitic metagabbro	43.34	3.01	15.14	23.21	0.30	3.58	7.47	3.35	0.69	2.09	ND	0.19	101.22

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-ERD-111A	Caribou Lake	OTH-097	Grab	Gabbronorite	51.20	0.79	17.91	10.71	0.17	8.03	8.61	2.95	0.45	0.09	0.40	0.03	101.32
01-ERD-112A	Caribou Lake	OTH-097	Grab	Monzogranite	73.73	0.19	13.79	1.73	0.02	0.28	1.17	3.19	5.70	0.04	0.49	ND	100.32
01-ERD-114A	Caribou Lake	OTH-097	Grab	Gabbronorite	52.17	0.37	18.26	9.38	0.17	8.54	9.10	2.81	0.33	0.02	0.31	0.14	101.46
01-ERD-114B	Caribou Lake	OTH-097	Grab	Metagabbronorite	48.61	0.51	18.46	12.04	0.14	7.03	8.92	2.72	0.31	0.01	2.69	1.53	101.44
01-ERD-115A	Caribou Lake	OTH-097	Grab	Gabbronorite	51.06	0.51	19.22	9.14	0.15	8.09	9.35	2.84	0.36	0.04	0.23	0.02	100.99
01-ERD-116A	Caribou Lake	OTH-097	Grab	Pegmatitic norite	52.10	0.28	18.72	9.18	0.16	9.26	8.27	2.79	0.30	0.02	0.25	0.16	101.33
01-ERD-117A	Caribou Lake	OTH-097	Grab	Olivine-norite	43.75	0.45	11.63	13.80	0.19	20.36	6.52	1.63	0.25	0.03	1.68	0.10	100.28
01-ERD-118A	Caribou Lake	OTH-097	Grab	Olivine-gabbronorite	51.62	0.61	16.08	11.45	0.21	7.83	9.50	2.64	0.49	0.04	0.67	0.30	101.14
01-ERD-119A	Caribou Lake	OTH-097	Grab	Metagabbro	49.79	0.42	18.47	8.46	0.13	8.83	9.97	3.11	0.36	0.13	0.89	0.02	100.58
01-ERD-120A	Caribou Lake	OTH-097	Grab	Metasediment?	63.59	0.64	17.10	6.00	0.10	0.95	4.08	4.21	3.11	0.20	0.27	ND	100.26
01-ERD-096A	Papineau	OTH-098	Grab	Metagabbro	48.05	2.72	21.75	11.42	0.12	2.40	9.92	3.69	0.61	0.07	0.37	0.33	101.14
95-RME-0160	McClintock	OTH-099	Grab	Norite	49.11	0.28	15.38	10.58	0.17	14.80	7.76	1.34	0.26	0.03	0.53	0.33	100.24
95-RME-0161	McClintock	OTH-099	Grab	Ore	28.61	0.28	12.47	36.10	0.12	4.91	5.79	1.04	0.20	0.04	9.75	14.00	99.30
95-RME-0162	McClintock	OTH-099	Grab	Ore host rock	48.21	0.57	17.97	11.95	0.14	7.88	8.40	2.35	0.68	0.11	2.63	0.50	100.88
95-RME-0163	McClintock	OTH-099	Grab	Norite	47.95	1.52	16.08	13.03	0.19	6.89	10.58	2.90	0.57	0.49	0.62	0.18	100.81
01-ERD-051A	Little Papineau L.	OTH-100	Grab	Tonalite	55.09	1.96	15.90	8.46	0.10	2.69	4.66	4.19	4.10	0.76	1.10	0.23	99.01
01-ERD-080A	Little Papineau L.	OTH-100	Grab	Tonalite	60.96	0.53	18.81	5.59	0.09	2.45	5.21	5.23	1.55	0.13	0.70	ND	101.23
01-CMV-014A	Raglan Hills	OTH-101	Grab	Metagabbro	48.48	0.27	24.61	4.37	0.07	4.06	14.48	2.98	0.29	0.03	0.56	0.02	100.21
01-CMV-015A	Raglan Hills	OTH-101	Grab	Metagabbro	46.82	0.37	16.52	7.44	0.12	9.28	16.84	1.84	0.25	ND	0.70	0.01	100.18
01-CMV-016A	Raglan Hills	OTH-101	Grab	Metagabbro	47.94	0.30	12.98	6.55	0.11	12.77	18.48	1.00	0.25	0.02	0.57	0.06	100.96
01-CMV-017A	Raglan Hills	OTH-101	Grab	Metagabbro	47.53	0.91	10.74	9.63	0.16	11.44	17.84	1.49	0.20	0.11	0.73	0.01	100.78
01-CMV-018A	Raglan Hills	OTH-101	Grab	Metagabbro	47.02	0.24	23.40	5.08	0.09	5.32	14.39	2.64	0.49	0.01	0.74	0.01	99.43
01-CMV-018B	Raglan Hills	OTH-101	Grab	Pegmatitic gabbro	43.05	2.87	17.68	14.42	0.16	7.24	10.34	3.30	0.65	0.18	0.65	0.05	100.54
01-CMV-019A	Raglan Hills	OTH-101	Grab	Olivine-pyroxenite	46.11	0.37	5.36	6.53	0.11	22.17	15.47	0.45	0.13	ND	4.69	0.01	101.39
01-CMV-020A	Raglan Hills	OTH-101	Grab	Hornblendite	44.58	0.57	11.56	10.65	0.16	14.95	14.05	1.71	0.38	0.05	1.24	0.02	99.90
01-CMV-021A	Raglan Hills	OTH-101	Grab	Metagabbro	43.06	1.06	15.84	11.88	0.14	6.52	17.42	1.87	0.35	ND	0.58	0.08	98.73
01-CMV-022A	Raglan Hills	OTH-101	Grab	Metagabbro	47.85	0.64	13.15	10.76	0.20	8.20	14.46	2.97	0.48	0.08	0.91	0.55	99.69
01-CMV-023A	Raglan Hills	OTH-101	Grab	Metagabbro	46.82	1.05	13.43	10.93	0.15	7.89	17.28	1.74	0.38	0.24	0.53	0.02	100.45
01-CMV-024A	Raglan Hills	OTH-101	Grab	Metagabbro	45.79	1.69	15.84	15.14	0.23	7.90	11.56	2.35	0.10	0.15	0.51	0.01	101.26
01-CMV-024B	Raglan Hills	OTH-101	Grab	Metagabbro	42.21	3.27	12.32	22.71	0.32	6.19	10.14	2.44	0.41	0.20	0.35	0.03	100.56
01-CMV-025A	Raglan Hills	OTH-101	Grab	Metagabbro	45.88	2.77	14.70	18.34	0.27	5.86	9.41	3.21	0.22	0.22	0.36	0.02	101.24
01-CMV-025B	Raglan Hills	OTH-101	Grab	Metagabbro	45.10	2.79	14.24	18.97	0.25	5.73	11.66	1.33	0.15	0.21	ND	0.25	100.43
01-CMV-026A	Raglan Hills	OTH-101	Grab	Pegmatitic metagabbro	51.69	0.49	13.43	9.66	0.14	10.45	9.57	2.50	1.10	0.03	0.77	0.01	99.84
01-CMV-026B	Raglan Hills	OTH-101	Grab	Metagabbro	46.92	0.76	10.08	9.90	0.14	13.68	15.53	1.83	0.41	ND	1.11	0.02	100.38
01-CMV-027A	Raglan Hills	OTH-101	Grab	Amphibolite	43.64	0.98	9.61	17.83	0.28	11.71	13.58	1.54	0.49	0.12	0.58	0.01	100.37
01-CMV-028A	Raglan Hills	OTH-101	Grab	Amphibolite	47.09	0.49	8.74	12.20	0.21	15.77	13.53	1.22	0.68	ND	0.50	0.02	100.44
01-ERD-036A	Tudor	OTH-102	Grab	Pegmatitic gabbro	41.20	3.68	13.82	20.44	0.14	6.32	10.90	2.18	0.24	0.03	0.95	0.28	99.89
01-ERD-037A	Tudor	OTH-102	Grab	Metagabbro	44.92	1.88	16.11	14.20	0.14	6.40	12.62	2.69	0.13	0.02	1.08	0.41	100.19

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2	TiO_2	Al_2O_3	Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	LOI	S	TOTAL
					0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.05%	0.01%	
01-ERD-038A	Tudor	OTH-102	Grab	Gabbronorite	46.90	1.52	16.38	12.07	0.15	6.44	12.85	2.42	0.17	0.02	1.49	0.34	100.41
01-ERD-039A	Tudor	OTH-102	Grab	Gabbronorite	47.81	1.25	15.28	10.96	0.14	7.48	14.46	1.67	0.12	0.01	1.14	0.29	100.32
01-ERD-040A	Tudor	OTH-102	Grab	Olivine-gabbronorite	43.40	2.41	15.46	16.52	0.14	6.14	13.04	2.43	0.12	0.01	0.48	0.35	100.17
01-ERD-041A	Tudor	OTH-102	Grab	Metagabbro	48.02	1.50	14.93	12.59	0.16	8.90	10.67	2.85	0.29	0.03	1.05	0.07	101.00
01-ERD-042A	Tudor	OTH-102	Grab	Metagabbro	46.31	1.11	18.12	12.30	0.16	7.09	9.44	3.55	0.25	0.21	2.29	0.14	100.83
01-ERD-043A	Tudor	OTH-102	Grab	Metagabbro	44.08	3.30	15.81	16.48	0.21	6.09	9.43	3.39	0.23	0.96	0.76	0.16	100.74
01-ERD-044A	Tudor	OTH-102	Grab	Metagabbro	43.43	3.26	15.35	16.50	0.20	5.66	9.63	2.72	0.28	0.75	2.83	0.08	100.61
01-ERD-045A	Tudor	OTH-102	Grab	Metagabbro	50.50	0.63	18.92	7.73	0.11	6.53	10.24	3.67	0.51	0.04	1.61	0.01	100.48
01-ERD-046A	Tudor	OTH-102	Grab	Gabbronorite	51.34	1.39	19.49	8.17	0.12	5.44	8.53	4.26	0.48	0.03	1.45	0.03	100.70
01-ERD-046B	Tudor	OTH-102	Grab	Gabbronorite	43.75	3.62	13.66	18.60	0.20	7.52	9.90	2.39	0.15	0.01	0.68	0.17	100.48
01-ERD-047A	Tudor	OTH-102	Grab	Gabbronorite	51.30	0.46	19.41	5.77	0.07	6.43	9.16	4.10	0.21	0.02	3.36	0.01	100.28
01-ERD-048A	Tudor	OTH-102	Grab	Olivine-gabbronorite	47.69	0.45	15.85	8.24	0.14	11.53	13.18	2.00	0.22	ND	1.43	0.09	100.75
01-ERD-049A	Tudor	OTH-102	Grab	Gabbronorite	50.50	0.60	19.07	7.68	0.11	7.40	11.16	2.97	0.15	0.02	1.02	0.10	100.68
01-ERD-050A	Tudor	OTH-102	Grab	Pegmatitic gabbronorite	47.01	1.53	16.08	11.54	0.15	7.40	11.37	3.18	0.10	0.03	2.10	0.14	100.49
01-ERD-052A	Tudor	OTH-102	Grab	Metagabbro	44.67	3.99	14.10	17.42	0.22	6.90	9.20	2.59	0.18	0.02	1.05	0.24	100.36
01-ERD-053A	Tudor	OTH-102	Grab	Altered gabbro	44.63	0.29	18.59	10.14	0.14	9.03	8.48	2.76	0.09	0.01	7.19	0.08	101.35
01-ERD-054A	Tudor	OTH-102	Grab	Gabbronorite	42.93	3.43	14.74	16.62	0.16	6.03	12.51	2.17	0.35	0.03	0.81	0.26	99.79
01-ERD-055A	Tudor	OTH-102	Grab	Clinopyroxenite	47.22	1.37	5.54	11.53	0.14	12.95	20.77	0.77	0.07	0.01	0.53	0.48	100.89
01-ERD-055B	Tudor	OTH-102	Grab	Magnetite layer	0.95	14.66	6.20	73.11	0.26	3.26	0.66	ND	ND	ND	ND	0.17	97.17
01-ERD-056A	Tudor	OTH-102	Grab	Gabbro	45.99	1.57	11.26	11.73	0.15	9.13	17.04	1.70	0.17	0.02	1.49	0.02	100.24
01-ERD-057A	Tudor	OTH-102	Grab	Metagabbro	43.61	2.14	17.18	16.24	0.15	5.93	11.10	2.81	0.20	0.03	1.14	0.24	100.50
01-ERD-058A	Tudor	OTH-102	Grab	Gabbronorite	46.94	1.37	13.86	10.88	0.14	6.54	16.56	2.56	0.32	0.66	0.80	ND	100.63
01-ERD-059A	Tudor	OTH-102	Grab	Metagabbro	48.75	1.31	16.56	11.87	0.15	7.91	10.25	3.05	0.18	0.02	0.99	0.14	101.03
01-ERD-060A	Tudor	OTH-102	Grab	Metagabbro	43.72	3.59	14.40	17.51	0.25	6.43	10.46	2.46	0.44	0.30	1.13	0.03	100.69
01-ERD-061A	Tudor	OTH-102	Grab	Tonalite	62.25	0.95	15.80	8.67	0.09	2.11	5.56	3.85	0.41	0.21	0.86	0.30	100.77
01-ERD-062A	Tudor	OTH-102	Grab	Gabbro?	49.07	1.43	15.98	11.99	0.27	7.49	9.31	3.28	1.01	0.12	0.74	0.05	100.68
01-ERD-063A	Tudor	OTH-102	Grab	Metagabbro	44.41	2.98	17.21	14.84	0.24	5.45	9.93	3.35	0.39	1.05	0.81	0.07	100.67
01-ERD-064A	Tudor	OTH-102	Grab	Metagabbro	46.32	2.08	15.18	14.10	0.19	7.75	10.76	3.00	0.22	0.04	1.02	0.14	100.66
01-ERD-065A	Tudor	OTH-102	Grab	Metagabbro	43.98	2.18	10.49	13.66	0.15	8.44	17.98	1.13	0.19	0.04	1.95	0.16	100.20
01-ERD-066A	Tudor	OTH-102	Grab	Pegmatitic gabbro	44.89	2.14	19.20	12.90	0.11	4.64	10.67	3.07	0.28	0.01	2.40	0.21	100.31
01-CMV-008A	Lingham Lake	OTH-103	Grab	Metagabbro	43.65	6.69	14.81	14.10	0.21	5.97	9.71	2.76	0.86	0.16	0.97	0.11	99.88
01-CMV-008B	Lingham Lake	OTH-103	Grab	Metagabbro	45.71	2.33	18.24	13.82	0.12	4.85	8.73	3.58	1.53	0.56	0.78	0.14	100.26
01-CMV-009A	Lingham Lake	OTH-103	Grab	Lherzolite	38.40	0.90	4.13	17.89	0.13	25.97	3.46	0.24	0.06	0.12	9.07	0.02	100.37
01-CMV-009B	Lingham Lake	OTH-103	Grab	Olivine-pyroxenite?	35.06	2.66	12.19	14.38	0.16	21.86	4.88	0.26	0.12	0.81	7.46	0.01	99.85
01-CMV-010A	Lingham Lake	OTH-103	Grab	Pyroxenite	50.42	0.76	3.90	12.81	0.18	18.59	10.97	0.32	0.11	0.04	2.72	0.04	100.82
01-CMV-011A	Lingham Lake	OTH-103	Grab	Clinopyroxenite	49.67	0.78	4.62	14.78	0.23	19.02	8.29	0.25	0.35	0.10	2.73	0.03	100.81
01-CMV-011B	Lingham Lake	OTH-103	Grab	Clinopyroxenite	45.24	0.79	3.87	12.38	0.23	14.89	12.18	0.18	0.01	0.14	10.70	0.01	100.63
01-CMV-012A	Lingham Lake	OTH-103	Grab	Lherzolite	44.97	2.69	9.14	12.37	0.17	16.14	9.80	1.00	0.93	0.19	2.41	0.03	99.80

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-CMV-013A	Lingham Lake	OTH-103	Grab	Metagabbro	51.28	1.42	17.46	11.21	0.17	5.59	8.39	4.00	0.54	0.19	0.68	ND	100.94
01-ERD-067A	Lingham Lake	OTH-103	Grab	Metagabbro	50.06	0.23	19.26	7.11	0.11	7.99	10.63	2.72	0.16	ND	2.53	ND	100.80
01-ERD-068A	Lingham Lake	OTH-103	Grab	Leucogabbro	56.60	0.86	16.84	6.97	0.10	2.63	4.87	4.50	2.34	0.21	4.27	ND	100.18
01-ERD-069A	Lingham Lake	OTH-103	Grab	Metagabbro	46.35	0.50	17.97	7.22	0.12	4.29	8.70	0.46	4.70	0.04	10.35	ND	100.69
01-ERD-070A	Lingham Lake	OTH-103	Grab	Gabbro	52.07	1.27	16.59	8.15	0.05	5.97	5.52	3.81	0.96	0.30	6.32	ND	101.00
01-ERD-071A	Lingham Lake	OTH-103	Grab	Metagabbro	51.84	1.39	17.44	8.62	0.12	5.83	8.11	3.53	1.58	0.32	1.56	0.05	100.33
01-ERD-072A	Lingham Lake	OTH-103	Grab	Metagabbro	53.75	0.97	18.18	7.60	0.11	4.45	6.85	4.16	1.47	0.19	1.24	ND	98.98
01-ERD-073A	Lingham Lake	OTH-103	Grab	Metagabbro	50.46	0.73	21.08	7.52	0.09	4.76	9.29	2.81	1.27	0.05	2.47	0.01	100.54
01-ERD-074A	Lingham Lake	OTH-103	Grab	Metagabbro	50.42	0.94	16.37	8.59	0.14	5.17	10.09	2.65	0.68	0.10	5.53	0.04	100.69
01-ERD-076A	Lingham Lake	OTH-103	Grab	Metagabbro	56.54	0.83	17.22	6.34	0.09	4.06	5.53	3.64	2.03	0.18	3.30	ND	99.76
01-ERD-077A	Lingham Lake	OTH-103	Grab	Metagabbro	57.13	0.81	16.90	6.37	0.09	3.50	4.97	3.98	1.81	0.16	4.86	ND	100.58
01-ERD-078A	Lingham Lake	OTH-103	Grab	Metagabbro	52.06	0.69	17.00	8.32	0.12	5.09	7.13	2.72	1.45	0.12	6.08	0.01	100.78
01-ERD-079A	Lingham Lake	OTH-103	Grab	Metagabbro	47.40	2.30	18.23	11.22	0.12	5.57	7.01	2.32	0.62	0.05	6.13	0.07	100.98
01-CMV-029A	Killer Creek	OTH-104	Grab	Metagabbro	54.04	1.33	21.11	5.88	0.07	2.39	8.18	4.75	1.13	0.33	0.59	0.01	99.81
01-CMV-030A	Killer Creek	OTH-104	Grab	Metagabbro	51.31	1.46	22.55	5.35	0.07	1.99	8.69	5.30	1.14	0.13	1.69	0.01	99.67
01-CMV-031A	Killer Creek	OTH-104	Grab	Metagabbro	51.12	1.43	22.43	5.85	0.07	2.46	8.88	4.81	1.12	0.48	0.76	0.01	99.42
01-CMV-032A	Killer Creek	OTH-104	Grab	Hornblendite	46.64	1.86	12.35	13.49	0.20	10.99	8.96	2.75	0.57	0.65	0.88	0.01	99.33
01-CMV-033A	Killer Creek	OTH-104	Grab	Metagabbro	47.80	3.17	18.77	9.98	0.12	4.84	9.67	3.81	0.74	0.75	0.57	0.01	100.23
01-CMV-034A	Killer Creek	OTH-104	Grab	Pegmatitic gabbro	48.04	1.31	19.40	9.91	0.12	5.63	9.96	3.90	0.61	0.98	0.85	ND	100.70
01-CMV-035A	Killer Creek	OTH-104	Grab	Metagabbro	50.48	1.01	16.69	12.05	0.20	5.70	11.22	2.58	0.30	0.21	0.59	ND	101.04
01-CMV-037A	Killer Creek	OTH-104	Grab	Amphibolite	41.04	4.49	10.56	20.39	0.31	9.75	9.87	1.81	0.39	1.44	0.31	0.10	100.35
01-ERD-081A	Mountain Grove	OTH-105	Grab	Metagabbro	49.34	0.78	16.63	10.05	0.16	7.05	9.83	3.82	0.86	0.10	2.22	0.03	100.84
01-ERD-082A	Mountain Grove	OTH-105	Grab	Metagabbro	52.51	1.64	16.33	10.58	0.16	4.67	6.57	4.33	2.22	0.37	1.34	0.15	100.72
01-ERD-083A	Mountain Grove	OTH-105	Grab	Pegmatitic gabbro	45.20	0.73	16.41	12.31	0.17	12.05	7.92	3.09	0.84	0.08	1.31	0.12	100.12
01-ERD-084A	Mountain Grove	OTH-105	Grab	Gabbro	38.81	4.53	12.36	24.19	0.18	7.05	9.44	2.21	0.45	0.05	0.74	0.40	100.02
01-ERD-085A	Mountain Grove	OTH-105	Grab	Quartz-gabbro	59.84	0.62	6.81	10.96	0.29	9.90	8.89	0.83	0.71	0.13	2.27	0.03	101.25
01-ERD-086A	Mountain Grove	OTH-105	Grab	Olivine-gabbronorite	46.97	2.96	14.96	14.38	0.19	5.08	8.10	4.11	1.55	0.87	0.51	0.49	99.70
01-ERD-087A	Mountain Grove	OTH-105	Grab	Monzodiorite	55.63	1.38	17.54	7.50	0.08	2.30	4.09	4.97	3.34	0.46	2.70	0.06	99.98
01-ERD-088A	Mountain Grove	OTH-105	Grab	Metagabbronorite	48.97	1.96	16.02	11.83	0.17	6.35	8.70	3.69	1.24	0.44	1.07	0.20	100.44
01-ERD-089A	Mountain Grove	OTH-105	Grab	Olivine-gabbronorite	55.41	1.45	16.94	7.77	0.13	2.83	5.09	5.51	3.63	0.49	0.69	0.10	99.95
01-ERD-090A	Mountain Grove	OTH-105	Grab	Gabbronorite	47.60	2.77	15.70	13.33	0.18	5.28	7.96	3.92	1.69	0.81	1.05	0.30	100.29
01-ERD-091A	Mountain Grove	OTH-105	Grab	Olivine-gabbronorite	48.34	2.89	14.84	13.78	0.18	4.73	7.51	4.20	2.12	0.90	0.62	0.16	100.11
01-ERD-092A	Mountain Grove	OTH-105	Grab	Metagabbronorite	58.90	1.30	17.06	6.43	0.12	1.82	3.69	5.88	4.32	0.37	0.40	0.02	100.29
01-ERD-093A	Mountain Grove	OTH-105	Grab	Metagabbro	50.84	1.95	16.02	12.12	0.17	5.01	7.48	4.31	1.43	0.40	0.82	0.21	100.54
01-ERD-094A	Mountain Grove	OTH-105	Grab	Pegmatitic gabbronorite	45.23	0.96	12.28	14.25	0.20	12.47	7.64	1.72	1.59	0.08	2.99	0.08	99.42
01-ERD-095A	Mountain Grove	OTH-105	Grab	Metagabbro	51.39	1.21	17.81	8.95	0.12	5.22	8.69	3.96	1.40	0.19	1.29	0.20	100.23
01-ERD-001A	Lavant	OTH-106	Grab	Metagabbro	46.66	1.87	18.12	14.02	0.21	5.57	9.28	3.43	0.49	0.38	1.07	0.08	101.11
01-ERD-001B	Lavant	OTH-106	Grab	Metagabbro	45.47	2.08	18.36	13.55	0.15	4.25	8.44	4.73	0.47	0.90	1.44	0.04	99.84

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-ERD-003A	Lavant	OTH-106	Grab	Hornblendite	35.97	4.27	11.78	28.51	0.23	6.83	8.29	1.97	0.33	0.23	1.71	1.78	100.11
01-ERD-004A	Lavant	OTH-106	Grab	Pegmatitic gabbro	49.43	1.69	18.30	9.89	0.13	5.15	9.72	4.33	0.53	0.70	0.82	0.04	100.70
01-ERD-005A	Lavant	OTH-106	Grab	Orthopyroxene-gabbro	47.61	1.42	17.76	13.68	0.15	6.10	9.92	2.97	0.12	0.03	0.40	0.20	100.16
01-ERD-006A	Lavant	OTH-106	Grab	Gabbro?	60.80	0.87	16.86	7.43	0.12	1.73	4.53	4.05	2.18	0.28	0.96	0.01	99.80
01-ERD-007A	Lavant	OTH-106	Grab	Metagabbro	51.56	0.54	18.24	7.76	0.12	5.58	8.02	3.43	1.46	0.21	2.00	0.07	98.91
01-ERD-009A	Lavant	OTH-106	Grab	Metagabbro	70.57	0.34	14.87	3.83	0.05	0.67	1.91	4.18	2.88	0.08	0.60	ND	99.97
01-ERD-009B	Lavant	OTH-106	Grab	Metagabbro	48.56	1.57	18.54	12.21	0.17	4.62	7.91	4.22	1.13	0.43	0.64	0.08	100.02
01-ERD-010A	Lavant	OTH-106	Grab	Metagabbro	47.18	2.10	17.05	13.56	0.20	5.64	8.39	3.55	1.37	0.21	0.64	0.08	99.90
01-ERD-011A	Lavant	OTH-106	Grab	Metagabbro	59.15	1.12	16.45	7.78	0.13	3.08	5.75	4.38	1.30	0.35	0.80	0.01	100.28
01-ERD-012A	Lavant	OTH-106	Grab	Metagabbro	48.64	1.49	19.96	10.54	0.13	4.50	8.54	4.11	0.82	0.23	0.90	0.09	99.86
01-ERD-013A	Lavant	OTH-106	Grab	Metagabbro	52.76	0.93	17.66	9.42	0.14	4.97	8.06	3.69	0.62	0.23	1.05	0.07	99.54
01-ERD-014A	Lavant	OTH-106	Grab	Leucogabbro	51.03	0.27	21.53	5.57	0.11	5.46	9.55	2.77	0.83	0.03	2.34	0.06	99.49
01-ERD-015A	Lavant	OTH-106	Grab	Gabbro	49.15	0.24	19.41	5.55	0.11	7.71	11.46	2.04	0.92	0.02	2.71	0.04	99.31
01-ERD-016A	Lavant	OTH-106	Grab	Gabbronorite	49.19	0.24	16.44	6.03	0.12	8.82	14.33	1.83	0.34	0.02	2.67	0.05	100.04
01-ERD-017A	Lavant	OTH-106	Grab	Gabbronorite	49.80	1.27	17.49	10.63	0.14	5.33	7.74	4.40	1.44	0.06	1.46	0.10	99.76
01-ERD-018A	Lavant	OTH-106	Grab	Gabbronorite	53.24	0.29	15.08	7.43	0.13	6.83	7.79	3.86	1.53	0.09	3.22	0.03	99.48
01-ERD-019A	Lavant	OTH-106	Grab	Metagabbro	63.11	0.59	18.60	4.21	0.04	1.57	4.16	4.98	1.77	0.14	0.84	0.05	100.02
01-CMV-001A	Wolfe Lake	OTH-107	Grab	Metagabbro	45.72	2.52	16.88	14.48	0.13	6.14	5.01	4.55	2.18	0.82	1.89	0.19	100.31
01-CMV-001B	Wolfe Lake	OTH-107	Grab	Metagabbro	44.33	2.96	15.79	16.56	0.20	5.20	8.18	3.92	1.30	0.91	0.96	0.49	100.31
01-CMV-002A	Wolfe Lake	OTH-107	Grab	Gabbro	47.53	1.51	16.09	12.34	0.16	7.99	10.24	2.72	0.92	0.57	0.57	0.30	100.64
01-CMV-003A	Wolfe Lake	OTH-107	Grab	Metagabbro	48.41	2.50	14.98	14.38	0.20	5.55	6.92	3.25	2.62	0.80	0.69	0.01	100.30
01-CMV-003B	Wolfe Lake	OTH-107	Grab	Metagabbro	49.64	1.30	17.34	11.10	0.11	5.37	8.66	3.68	1.25	0.18	1.31	0.28	99.95
01-CMV-004A	Wolfe Lake	OTH-107	Grab	Metagabbro	50.79	1.16	21.42	7.97	0.09	2.92	8.45	4.38	1.47	0.12	1.17	0.09	99.95
01-CMV-005A	Wolfe Lake	OTH-107	Grab	Metagabbro	48.26	2.83	17.64	12.45	0.11	4.56	6.40	4.63	1.64	0.27	1.27	0.18	100.06
01-CMV-006A	Wolfe Lake	OTH-107	Grab	Metagabbro	48.14	0.95	13.04	11.90	0.21	11.14	7.03	2.74	2.05	0.18	2.26	0.05	99.63
01-CMV-007A	Wolfe Lake	OTH-107	Grab	Metagabbro	41.09	2.91	14.05	21.88	0.24	7.28	8.90	2.60	0.72	0.03	0.85	0.49	100.54
01-ERD-020A	Donaldson Bay	OTH-108	Grab	Tonalite	62.86	0.62	17.17	4.88	0.07	1.84	4.29	4.62	1.76	0.14	0.77	0.02	99.02
01-ERD-021A	Donaldson Bay	OTH-108	Grab	Tonalite	65.91	0.54	16.83	3.92	0.05	1.48	3.53	4.40	2.40	0.11	0.70	0.01	99.88
01-ERD-021B	Donaldson Bay	OTH-108	Grab	Tonalite	66.59	0.52	16.80	4.13	0.03	1.32	2.82	4.55	2.52	0.09	1.05	ND	100.44
01-ERD-022A	Donaldson Bay	OTH-108	Grab	Tonalite	63.71	0.63	17.36	4.66	0.07	1.80	4.16	4.68	2.03	0.13	0.67	0.01	99.91
01-ERD-023A	Donaldson Bay	OTH-108	Grab	Tonalite	65.10	0.57	17.14	4.18	0.05	1.18	3.84	4.73	1.80	0.12	1.62	0.01	100.34
01-ERD-024A	Donaldson Bay	OTH-108	Grab	Tonalite	50.23	0.36	17.48	5.81	0.11	7.59	12.68	3.16	0.35	0.02	1.88	0.05	99.66
01-ERD-025A	Donaldson Bay	OTH-108	Grab	Quartz-diorite	63.16	0.65	17.33	5.17	0.07	2.01	4.47	4.48	1.82	0.14	0.81	0.01	100.12
01-ERD-026A	Donaldson Bay	OTH-108	Grab	Tonalite	61.53	0.70	17.47	5.27	0.07	2.12	4.70	4.49	1.74	0.15	0.96	0.01	99.20
01-ERD-026B	Donaldson Bay	OTH-108	Grab	Granodiorite	64.36	1.05	14.62	6.10	0.08	1.61	2.00	3.84	5.01	0.34	0.77	0.07	99.78
01-ERD-027A	Donaldson Bay	OTH-108	Grab	Tonalite	64.96	0.62	17.04	4.36	0.06	1.71	4.19	4.60	1.80	0.13	0.60	0.02	100.07
01-ERD-028A	Leo Lake	OTH-109	Grab	Gabbro	51.95	1.07	19.88	8.17	0.11	4.50	8.13	4.04	1.20	0.21	0.76	0.05	100.02
01-ERD-029A	Leo Lake	OTH-109	Grab	Metagabbro	46.46	2.80	14.72	16.08	0.19	4.90	6.79	3.55	1.87	0.48	1.73	0.36	99.58

Appendix 2 (cont.) - Major element geochemistry as weight percent oxide (wt %).

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	SiO_2 0.01%	TiO_2 0.01%	Al_2O_3 0.01%	Fe_2O_3 0.01%	MnO 0.01%	MgO 0.01%	CaO 0.01%	Na_2O 0.01%	K_2O 0.01%	P_2O_5 0.01%	LOI 0.05%	S 0.01%	TOTAL
01-ERD-030A	Leo Lake	OTH-109	Grab	Metagabbro	55.35	1.81	15.31	8.90	0.13	2.44	4.45	4.21	4.62	0.77	0.92	0.10	98.91
01-ERD-031A	Leo Lake	OTH-109	Grab	Gabbronorite	52.64	0.72	16.49	8.02	0.14	7.32	9.54	3.22	1.17	0.18	0.76	0.14	100.19
01-ERD-032A	Leo Lake	OTH-109	Grab	Olivine-gabbronorite	45.27	0.45	11.14	12.12	0.17	19.57	8.71	1.68	0.55	0.08	1.30	0.09	101.05
01-ERD-033A	Leo Lake	OTH-109	Grab	Gabbro	48.98	2.44	15.06	13.52	0.20	4.14	8.04	4.11	2.09	1.05	0.64	0.31	100.28
01-ERD-034A	Leo Lake	OTH-109	Grab	Metagabbro	54.99	1.88	16.32	8.82	0.13	2.49	4.74	4.69	4.18	0.76	0.92	0.20	99.92
01-ERD-034B	Leo Lake	OTH-109	Grab	Gabbronorite	56.24	2.06	16.25	6.92	0.13	2.12	5.20	5.15	4.06	0.73	0.96	0.04	99.80
01-ERD-035A	Leo Lake	OTH-109	Grab	Metagabbro	43.18	2.93	13.62	20.49	0.17	6.24	10.05	2.59	0.68	0.07	0.52	0.53	100.56

Appendix 3

Trace Element Geochemistry

The numbers in italics represent data from other sources, which may or may not have been previously published, and were included in this report to complement the new data. References for this data can be found in the Miscellaneous Notes of each intrusion (see Appendix 4).

Abbreviations:
alk - alkali
anorth - anorthositic
bt - biotite
bx - breccia
chl - chlorite
c, cpx - clinopyroxene
fel - felsic
fol - foliated
fp - feldspar
gab - gabbro
hb - hornblende
int - intermediate
mv - muscovite
NA - not analysed
ND - not detected
ol - olivine
opx - orthopyroxene
pegm - pegmatitic
pg - plagioclase
porphy - porphyritic
px - pyroxene
qz - quartz
sul - sulphide, sulphides
syen - syenite

Appendix 3. Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 6 ppm	Se 7 ppb	V 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.5ppb	Au 0.9 ppb
01-CAM-100A	Pipestone Bay	OTH-001	Grab	Talc-carbonate schist	2672	3	136	2763	ND	1	ND	ND	38	ND	ND	1.2
01-CAM-101A	Pipestone Bay	OTH-001	Grab	Talc-carbonate schist	2923	ND	153	4557	ND	2	ND	ND	ND	ND	ND	ND
01-CAM-102A	Pipestone Bay	OTH-001	Grab	Talc-carbonate schist	2257	ND	127	1660	ND	1	ND	ND	ND	ND	ND	ND
01-CAM-103A	Pipestone Bay	OTH-001	Grab	Talc-carbonate schist	2339	ND	132	3350	ND	1	ND	ND	ND	ND	ND	ND
01-CAM-104A	Pipestone Bay	OTH-001	Grab	Dunite	1913	ND	117	2536	ND	1	ND	ND	7	ND	ND	ND
01-CAM-105A	Pipestone Bay	OTH-001	Grab	Dunite	1892	ND	132	8498	ND	1	ND	ND	4	ND	ND	1.1
01-CAM-106A	Pipestone Bay	OTH-001	Grab	Carbonate-talc schist	1224	ND	85	2202	ND	2	ND	ND	32	ND	ND	27.3
01-CAM-107A	Pipestone Bay	OTH-001	Grab	Dunite	2057	ND	125	3767	ND	1	ND	ND	ND	1.4	ND	1.3
01-CAM-108A	Pipestone Bay	OTH-001	Grab	Dunite	1775	ND	135	5186	ND	4	ND	ND	ND	1.2	ND	ND
01-CAM-109A	Pipestone Bay	OTH-001	Grab	Peridotite	1911	4	150	4313	ND	2	ND	ND	54	ND	ND	ND
01-CAM-110A	Pipestone Bay	OTH-001	Grab	Dunite	2222	ND	135	2906	ND	2	ND	ND	11	0.6	ND	1.1
01-CAM-111A	Pipestone Bay	OTH-001	Grab	Peridotite to dunite	1597	ND	120	5494	ND	3	3	ND	ND	1.1	ND	ND
01-CAM-112A	Pipestone Bay	OTH-001	Grab	Peridotite to dunite	1820	7	119	2856	78	4	6	ND	10	2.1	10	ND
01-CAM-113A	Pipestone Bay	OTH-001	Grab	Metagabbro	88	100	44	206	169	17	34	7	158	15.0	13	39.4
01-CAM-114A	Pipestone Bay	OTH-001	Grab	Peridotite	2512	ND	112	1958	ND	2	ND	ND	19	7.5	15	16.7
01-CAM-115A	Pipestone Bay	OTH-001	Grab	Dunite	2527	7	146	1820	8	2	ND	ND	15	ND	ND	1.2
01-MAH-005A	Pipestone Bay	OTH-001	Grab	Dunite	2146	5	112	7911	ND	3	3	ND	ND	0.8	ND	ND
01-MAH-006A	Pipestone Bay	OTH-001	Grab	Peridotite or pyroxenite	2134	5	129	4658	ND	2	ND	ND	42	0.7	ND	ND
01-MAH-006B	Pipestone Bay	OTH-001	Grab	Hornblende-leucogabbro dike	39	499	17	52	598	6	193	59	69	ND	ND	211.8
01-MAH-007A	Pipestone Bay	OTH-001	Grab	Dunite	2316	17	124	3493	ND	2	ND	ND	16	0.7	ND	2.5
01-MAH-008A	Pipestone Bay	OTH-001	Grab	Peridotite or pyroxenite?	1760	6	120	4829	ND	2	ND	ND	13	ND	ND	ND
01-MAH-009A	Pipestone Bay	OTH-001	Grab	Peridotite or dunite?	1927	7	150	7546	ND	2	ND	ND	ND	ND	ND	ND
01-MAH-010A	Pipestone Bay	OTH-001	Grab	Peridotite	2166	ND	117	3081	ND	2	ND	ND	154	0.5	ND	ND
01-CMV-075B1	Trout Bay	OTH-002	Grab	Ultramafic flow	1706	275	118	2219	185	6	11	ND	80	24.1	107.8	3.9
01-CMV-075B2	Trout Bay	OTH-002	Grab	Cannot be identified	26067	13095	282	3924	13270	2	ND	2	25	319.6	310.0	77.6
01-CMV-075C	Trout Bay	OTH-002	Grab	Metagabbro	194	38	54	392	187	22	58	ND	204	4.2	41	ND
01-CMV-075D	Trout Bay	OTH-002	Grab	Metagabbro	220	82	59	424	190	12	17	15	214	7.3	78	1.1
01-CMV-075E	Trout Bay	OTH-002	Grab	Mafic volcanic	807	572	36	42	158	6	4	ND	ND	0.7	9.3	20.3
01-CMV-076A	Trout Bay	OTH-002	Grab	Metagabbro	74	80	61	315	209	25	89	4	87	6.2	56	ND
01-CMV-077A	Trout Bay	OTH-002	Grab	Gabbro	269	117	56	427	3035	13	20	2	120	6.9	48	2.7
01-CMV-078A	Trout Bay	OTH-002	Grab	Mafic volcanic	2709	242	84	2075	87	7	7	ND	9	62.5	29.6	7.7
01-CMV-078B	Trout Bay	OTH-002	Grab	Mafic metavolcanic	2701	1208	96	3197	1683	6	8	ND	8	77.8	347.5	18.4
01-CMV-083A	Trout Bay	OTH-002	Grab	Metagabbro	33	24	15	401	9	21	42	34	99	2.0	16	2.1
01-CMV-084A	Trout Bay	OTH-002	Grab	Metagabbro	140	94	70	202	209	18	45	10	74	1.1	69	1.6
01-CMV-085A	Trout Bay	OTH-002	Grab	Metagabbro	73	92	45	406	313	21	55	2	136	1.9	12	1.3
01-CMV-085B	Trout Bay	OTH-002	Grab	Metagabbro	79	92	42	222	89	15	54	3	152	1.9	11	1.9

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-CMV-086A	Trout Bay	OTH-002	Grab	Komatiite	1727	104	130	4078	566	7	8	ND	58	5.6	5.5	1.0
01-CMV-086B	Trout Bay	OTH-002	Grab	Komatiite	244	7	74	1524	ND	11	20	ND	20	10.3	7.2	ND
01-ERD-202A	Golden Arm	OTH-003	Grab	Metavolcanic	1118	162	105	2282	83	11	24	ND	6	4.6	5.9	ND
01-ERD-203A	Golden Arm	OTH-003	Grab	Metamelagabbro/pyroxenite	199	6	66	447	ND	16	38	ND	69	6.5	7.9	ND
01-ERD-204A	Golden Arm	OTH-003	Grab	Px-hornblendite/pyroxenite	363	71	90	1772	33	12	29	ND	25	4.7	6.2	ND
01-ERD-205A	Golden Arm	OTH-003	Grab	Wehrlite (peridotite)	1449	147	125	2790	52	7	13	ND	24	3.0	3.9	ND
01-ERD-206A	Golden Arm	OTH-003	Grab	Wehrlite to dunite	1751	72	139	2240	35	8	19	ND	7	3.3	5.0	ND
01-ERD-207A	Golden Arm	OTH-003	Grab	Wehrlite (peridotite)	1839	14	134	2199	29	6	14	ND	4	2.1	2.8	ND
01-ERD-208A	Golden Arm	OTH-003	Grab	Olivine-websterite	1424	22	119	3062	69	7	17	ND	17	0.5	ND	ND
01-ERD-209A	Golden Arm	OTH-003	Grab	Peridotite	1982	61	147	3443	36	5	12	ND	2	2.3	2.3	ND
01-ERD-210A	Golden Arm	OTH-003	Grab	Dunite	3841	127	197	3194	484	4	ND	ND	ND	11.0	18.1	3.7
01-ERD-211A	Golden Arm	OTH-003	Grab	Dunite	1945	6	118	2345	138	3	ND	ND	11	ND	ND	ND
01-ERD-212A	Golden Arm	OTH-003	Grab	Dunite	4580	98	195	2176	964	3	ND	ND	ND	6.6	9.0	2.0
01-ERD-213A	Golden Arm	OTH-003	Grab	Peridotite	1896	3	115	2595	11	6	10	ND	4	3.3	3.5	ND
01-ERD-214A	Golden Arm	OTH-003	Grab	Peridotite	1874	14	130	2592	18	5	8	ND	4	2.0	1.2	ND
01-ERD-215A	Golden Arm	OTH-003	Grab	Peridotite	1488	52	118	3026	73	6	17	ND	16	2.6	3.5	ND
01-ERD-216A	Golden Arm	OTH-003	Grab	Pyroxenite	622	265	93	3065	107	8	16	ND	15	1.7	ND	ND
01-ERD-217A	Golden Arm	OTH-003	Grab	Metamelagabbro/pyroxenite	232	194	66	2037	95	13	29	11	51	6.8	7.4	1.9
01-ERD-218A	Golden Arm	OTH-003	Grab	Peridotite	1837	20	128	2729	58	5	7	ND	34	3.1	3.5	ND
01-ERD-219A	Golden Arm	OTH-003	Grab	Pyroxenite	1598	39	140	3080	45	6	11	ND	14	0.6	ND	ND
01-ERD-220A	Golden Arm	OTH-003	Grab	Pyroxenite to peridotite	1267	35	111	3082	9	7	13	ND	11	2.7	1.1	ND
01-ERD-221A	Golden Arm	OTH-003	Grab	Peridotite	1564	60	139	3539	92	6	8	ND	158	3.0	4.2	ND
01-ERD-193A	Hammel Lake	OTH-004	Grab	Metaleucogabbro	86	90	38	59	41	18	56	34	1138	0.9	1.7	1.7
01-ERD-194A	Hammel Lake	OTH-004	Grab	Metagabbro	154	35	44	205	17	13	57	41	920	2.4	ND	1.6
01-ERD-195A	Hammel Lake	OTH-004	Grab	Leucogabbro	136	56	42	194	20	14	74	32	940	3.0	3.4	ND
01-ERD-196A	Hammel Lake	OTH-004	Grab	Gabbro-metagabbro	124	78	42	128	11	11	ND	7	904	0.6	0.9	4.3
01-ERD-197A	Hammel Lake	OTH-004	Grab	Gabbro-metagabbro	209	23	55	428	25	13	17	17	856	1.5	2.1	ND
01-ERD-198A	Hammel Lake	OTH-004	Grab	Granite gneiss	18	52	18	114	1165	9	124	91	562	1.3	0.9	2.3
01-ERD-199A	Hammel Lake	OTH-004	Grab	Tonalite gneiss	21	21	35	79	14	34	165	30	774	ND	ND	1.2
01-ERD-200A	Hammel Lake	OTH-004	Grab	Metaleucogabbro	80	34	41	38	41	19	48	33	1056	0.7	ND	ND
01-ERD-201A	Hammel Lake	OTH-004	Grab	Quartz-diorite to quartz-gabbro	104	120	46	92	51	30	54	42	738	1.2	1.5	3.0
01-ERD-226A	Hammel Lake	OTH-004	Grab	Tonalite	53	78	25	57	96	28	233	67	959	ND	ND	ND
01-ERD-222A	Pure Gold Gabbro	OTH-005	Grab	Hornblende-quartz schist	13	38	32	43	ND	18	103	67	622	ND	ND	1.1
01-ERD-223A	Pure Gold Gabbro	OTH-005	Grab	Metavolcanic breccia?	33	9	19	139	52	25	151	60	260	1.0	ND	2.1
01-ERD-224A	Pure Gold Gabbro	OTH-005	Grab	Garnet-bt-mv-qz schist	12	41	ND	107	203	14	134	86	147	0.8	ND	2.4
01-ERD-225A	Pure Gold Gabbro	OTH-005	Grab	Metadiorite to metagabbro	67	75	31	401	28	14	61	96	604	4.7	3.4	1.6
01-ERD-189A	Dome-McDo-Bat.	OTH-006	Grab	Metagabbro	46	187	44	35	776	21	47	ND	138	1.2	ND	2.2
01-ERD-190A	Dome-McDo-Bat.	OTH-006	Grab	Metamelagabbro	119	92	58	491	76	16	35	11	71	11.0	8.4	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-ERD-191A	Dome-McDo-Bat.	OTH-006	Grab	Metamelagabbro	111	144	51	340	789	23	52	ND	139	4.4	3.7	2.1
01-ERD-192A	Dome-McDo-Bat.	OTH-006	Grab	Metamelagabbro	125	86	54	721	46	14	31	8	108	10.0	9.0	ND
01-ERD-192B	Dome-McDo-Bat.	OTH-006	Grab	Mafic schist or fol. metagabbro	144	88	59	686	94	16	34	36	46	10.2	9.3	1.8
01-MAH-001A	Dome-McDo-Bat.	OTH-006	Grab	Metamelagabbro/gabbronorite	107	3	26	288	ND	17	44	2	145	5.2	3.3	ND
01-MAH-002A	Dome-McDo-Bat.	OTH-006	Grab	Metamelagabbro	93	132	58	645	127	18	32	3	149	12.0	11.3	2.2
01-MAH-003A	Dome-McDo-Bat.	OTH-006	Grab	Metamelagabbro	131	73	49	487	96	14	29	2	107	10.6	8.3	1.3
01-CMV-087A	Peterson Property	OTH-007	Core	Mafic volcanic?	1788	902	1266	113	11062	25	249	10	347	191.3	1144.1	308.1
01-CMV-087B	Peterson Property	OTH-007	Core	Gabbro	995	2161	112	129	28218	19	180	2	153	112.5	30.9	72.9
01-CMV-087C	Peterson Property	OTH-007	Core	Banded iron formation	27	58	ND	40	1313	10	36	11	72	0.5	ND	26.4
01-CMV-087D	Peterson Property	OTH-007	Core	Gabbro	30	51	17	59	155	14	341	98	919	ND	ND	ND
01-CMV-088A	Peterson Property	OTH-007	Core	Mafic volcanic	110	219	63	80	330	23	64	105	59	12.2	17.1	3.2
01-CMV-088B	Peterson Property	OTH-007	Core	Mafic volcanic	191	118	69	906	149	16	40	ND	38	8.2	9.1	1.3
01-CMV-088C	Peterson Property	OTH-007	Core	Peridotite	1321	74	135	3368	79	8	16	ND	45	3.7	4.5	1.5
01-CMV-088D	Peterson Property	OTH-007	Core	Ultramafic rock?	862	97	109	3220	1348	8	13	ND	147	4.8	5.9	2.4
01-CMV-088F	Peterson Property	OTH-007	Core		1690	33	139	5340	77	5	15	2	13	3.6	5.4	0.9
01-CMV-089A	Peterson Property	OTH-007	Grab	Gabbro	155	184	60	293	328	22	45	11	125	4.7	1.7	2.3
01-CMV-090A	Peterson Property	OTH-007	Grab	Gabbro	71	73	21	127	169	14	127	30	1250	ND	ND	ND
01-CMV-091A	Peterson Property	OTH-007	Grab	Gabbro	216	162	70	1485	200	17	48	26	116	10.4	11.7	9.1
01-CMV-092A	Peterson Property	OTH-007	Grab	Metagabbro	29	183	51	36	45	44	99	4	80	ND	ND	1.8
01-CMV-079A	Pakwash Lake	OTH-008	Grab	Quartz-monzodiorite	42	5	19	156	10	14	109	68	856	ND	ND	ND
01-CMV-080A	Pakwash Lake	OTH-008	Grab	Quartz-diorite	143	48	33	672	69	39	79	66	523	1.7	1.3	ND
01-CMV-081A	Pakwash Lake	OTH-008	Grab	Quartz-monzodiorite	38	4	21	230	37	16	108	84	596	ND	ND	ND
01-CMV-082A	Bruce Lake	OTH-009	Grab	Metagabbro	83	204	55	226	727	21	48	4	283	0.5	ND	ND
01-CMV-082B	Bruce Lake	OTH-009	Grab	Metagabbro	69	62	50	155	164	23	63	4	207	ND	ND	ND
01-CAM-096A	Snakeweed Lake	OTH-010	Grab	Pg-bearing hb-pyroxenite	134	148	67	242	268	37	97	9	546	0.9	ND	ND
01-CAM-096B	Snakeweed Lake	OTH-010	Grab	Pg-bearing px-hornblendite	71	203	75	76	316	37	59	9	1282	ND	ND	ND
01-CAM-097A	Snakeweed Lake	OTH-010	Grab	Px-hb-gabbronorite	69	143	60	196	172	35	21	12	1428	ND	ND	1.2
01-CAM-098A	Snakeweed Lake	OTH-010	Grab	Melapyroxene to hb-gabbro	95	114	60	148	199	40	75	7	1276	0.8	1.3	2.1
01-CAM-099A	Snakeweed Lake	OTH-010	Grab	Pegm. melapyroxene-hb-gabbro	31	123	63	32	286	43	60	7	915	ND	ND	ND
93-JRP-100	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*414*	*14980*	*117*	98	*NA*	*NA*	*NA*	*NA*	*NA*	2.6	7.7	263.2
93-JRP-100D	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	1.5	2.5	171.2
93-JRP-101	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*138*	*7381*	*211*	*185*	*NA*	*NA*	*NA*	*NA*	*NA*	1.3	2.8	175.3
93-JRP-62	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*246*	*3189*	*80*	*242*	*NA*	*NA*	*NA*	*NA*	*NA*	2.5	5.4	27.9
93-JRP-68	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*1304*	*98240*	*266*	*44*	*NA*	*NA*	*NA*	*NA*	*NA*	9.7	23.0	484.8
93-JRP-69	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*814*	*25810*	*143*	*31*	*NA*	*NA*	*NA*	*NA*	*NA*	1.3	9.5	311.1
93-JRP-97	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*1164*	*71270*	*188*	*149*	*NA*	*NA*	*NA*	*NA*	*NA*	10.5	13.9	305.4
94-JRP-1003	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*NA*	*NA*	*NA*	*NA*	*NA*	*92*	*24*	*8*	*7*	3.5	2.2	ND
94-JRP-1004	Rex-Werner-Bug	OTH-011	Grab	Orthopyroxene-gabbro	940	6200	706	348	NA	35	34	68	71	1.2	31.9	34.6

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
94-JRP-1019	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	181	185	82	1100	NA	80	18	15	7	ND	ND	ND
94-JRP-1026	Rex-Werner-Bug	OTH-011	Grab	Orthopyroxene-gabbro	*64*	*701*	*66*	*221*	*NA*	*38*	*48*	*9*	*63*	2.1	ND	79.1
94-JRP-1026A	Rex-Werner-Bug	OTH-011	Grab	Orthopyroxene-gabbro	115	4019	62	232	NA	52	48	9	62	2.3	ND	14.8
94-JRP-1028	Rex-Werner-Bug	OTH-011	Grab	Leucogabbro	*99*	*2963*	*40*	*546*	*NA*	*10*	*18*	*43*	*161*	1.5	0.9	28.8
94-JRP-1041	Rex-Werner-Bug	OTH-011	Grab	Leucogabbro	*90*	*ND*	*29*	*176*	*NA*	*1*	*18*	*240*	*33*	0.8	ND	ND
94-JRP-1069	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*2565*	*1290*	*125*	*3636*	*NA*	*9*	*19*	*72*	*12*	85.3	275.1	20.8
94-JRP-1078	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*2565*	*1069*	*119*	*2602*	*NA*	*10*	*21*	*10*	*14*	85.3	164.5	4.8
94-JRP-1079	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	*NA*	96.8	372.8	14.3
94-JRP-1083	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*ND*	*2111*	*105*	*68*	*NA*	*26*	*92*	*16*	*125*	ND	0.9	8.4
94-JRP-1085	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	2509	898	240	27000	NA	NA	NA	NA	NA	162.1	505.1	5.7
94-JRP-1086	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*3900*	*2552*	*378*	*5457*	*NA*	*11*	*20*	*2*	*3*	122.8	407.2	4.7
94-JRP-1087	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	2875	2114	325	149000	NA	NA	NA	NA	NA	113.4	482.2	8.7
94-JRP-1091	Rex-Werner-Bug	OTH-011	Grab	Amphibolite	144	7700	2191	72	NA	14	28	4	14	ND	1.0	133.4
94-JRP-1094	Rex-Werner-Bug	OTH-011	Grab	Skarn	ND	797	2204	152	NA	NA	NA	NA	NA	1.3	2.0	48.8
94-JRP-1100	Rex-Werner-Bug	OTH-011	Grab	Skarn	652	4731	36300	839	NA	NA	NA	NA	NA	2.4	1.4	339.7
94-JRP-1102	Rex-Werner-Bug	OTH-011	Grab	Skarn	*ND*	*7000*	*2036*	*65*	*NA*	*NA*	*NA*	*NA*	*NA*	ND	ND	225.7
94-JRP-1107	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*NA*	*NA*	*NA*	*NA*	*NA*	*10*	*22*	*1*	*14*	69.1	310.1	21.9
94-JRP-1109	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	5800	2383	199	6745	NA	7	22	3	15	137.1	626.2	21.4
94-JRP-1114	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*NA*	*NA*	*NA*	*NA*	*NA*	*10*	*19*	*1*	*6*	62.8	310.5	22.1
94-JRP-1119	Rex-Werner-Bug	OTH-011	Grab	Skarn	*ND*	*7000*	*1655*	*43*	*NA*	*NA*	*NA*	*NA*	*NA*	0.8	1.8	48.3
94-JRP-1122	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*NA*	*NA*	*NA*	*NA*	*NA*	*6*	*13*	*1*	*3*	102.3	510.4	17.2
94-JRP-1123	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*NA*	*NA*	*NA*	*NA*	*NA*	*5*	*12*	*1*	*2*	68.2	285.2	13.2
94-JRP-1124	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	6000	1493	249	13975	NA	NA	NA	NA	NA	179.2	851.1	22.9
94-JRP-1125	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*NA*	*NA*	*NA*	*NA*	*NA*	*7*	*20*	*5*	*5*	187.2	508.5	66.1
94-JRP-1127	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*NA*	*NA*	*NA*	*NA*	*NA*	*10*	*18*	*1*	*3*	79.8	236.9	15.1
94-JRP-1128	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*NA*	*NA*	*NA*	*NA*	*NA*	*9*	*23*	*1*	*3*	149.7	548.1	21.7
94-JRP-1130	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*NA*	*NA*	*NA*	*NA*	*NA*	*7*	*17*	*1*	*4*	130.5	486.0	15.0
94-JRP-1131	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*NA*	*NA*	*NA*	*NA*	*NA*	*7*	*17*	*2*	*9*	53.4	217.5	6.7
94-JRP-1132	Rex-Werner-Bug	OTH-011	Grab	Ultramafic	*NA*	*NA*	*NA*	*NA*	*NA*	*8*	*16*	*1*	*5*	84.4	322.2	15.4
94-JRP-1137	Rex-Werner-Bug	OTH-011	Grab	Skarn	141	18000	219	84	NA	NA	NA	NA	NA	1.0	2.7	206.3
94-JRP-1139	Rex-Werner-Bug	OTH-011	Grab	Skarn	ND	6000	149	75	NA	21	73	29	49	ND	ND	62.0
94-JRP-1154	Rex-Werner-Bug	OTH-011	Grab	Gabbro	*343*	*ND*	*72*	*864*	*NA*	*21*	*73*	*29*	*49*	2.6	3.2	ND
01-CMV-066A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	27	163	86	38	494	7	4	2	263	ND	ND	ND
01-CMV-067A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	11	112	68	34	296	9	4	2	285	ND	ND	ND
01-CMV-067B	Mulcahy Lake	OTH-012	Grab	Gabbronorite	18	136	75	25	374	8	8	ND	258	ND	ND	ND
01-CMV-068A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	91	81	44	247	208	7	4	4	304	1.7	ND	ND
01-CMV-069A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	14	50	41	10	108	24	26	5	306	ND	ND	ND
01-CMV-070A	Mulcahy Lake	OTH-012	Grab	Metagabbro	57	44	31	65	113	12	15	7	345	ND	ND	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-CMV-070B	Mulcahy Lake	OTH-012	Grab	Metagabbro	ND	36	21	5	87	25	7	3	462	ND	ND	ND
01-CMV-071A	Mulcahy Lake	OTH-012	Grab	Gabbro	81	68	37	109	174	6	ND	5	308	ND	2.0	ND
01-CMV-072A	Mulcahy Lake	OTH-012	Grab	Metagabbro	67	27	42	154	110	5	ND	5	266	0.8	ND	ND
01-CMV-073A	Mulcahy Lake	OTH-012	Grab	Metagabbro	140	72	37	279	206	5	ND	5	315	0.6	2.8	ND
01-CMV-074A	Mulcahy Lake	OTH-012	Grab	Hornblende-gabbro	43	71	26	103	118	20	97	13	242	ND	ND	ND
01-CMV-074C	Mulcahy Lake	OTH-012	Grab	Gabbro	254	96	65	629	193	6	ND	6	141	1.1	1.1	ND
01-ERD-227A	Mulcahy Lake	OTH-012	Grab	Pyroxene-hornblende-gabbro	197	110	56	234	160	10	15	4	291	ND	ND	ND
01-ERD-228A	Mulcahy Lake	OTH-012	Grab	Pyroxene-hornblende-gabbro	105	120	70	138	208	8	ND	ND	261	ND	ND	ND
01-ERD-229A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	131	136	43	286	218	7	4	2	340	1.0	ND	ND
01-ERD-230A	Mulcahy Lake	OTH-012	Grab	Leucogabbro	72	45	34	420	107	7	ND	3	361	ND	ND	ND
01-ERD-231A	Mulcahy Lake	OTH-012	Grab	Gabbro	3	85	43	6	194	5	4	ND	290	ND	ND	ND
01-ERD-232A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	80	64	33	233	110	7	4	ND	300	1.1	ND	ND
01-ERD-233A	Mulcahy Lake	OTH-012	Grab	Pyroxene-hornblende-gabbro	61	54	31	233	48	4	ND	ND	403	ND	ND	ND
01-ERD-234A	Mulcahy Lake	OTH-012	Grab	Gabbronorite	83	91	54	92	223	5	ND	ND	339	ND	ND	ND
01-ERD-235A	Mulcahy Lake	OTH-012	Grab	Olivine-gabbronorite	213	89	57	160	126	6	ND	ND	348	ND	ND	ND
01-ERD-136A	Denmark/Rupert	OTH-013	Grab	Metagabbro	94	211	70	101	393	9	15	6	218	ND	ND	1.1
01-ERD-137A	Denmark/Rupert	OTH-013	Grab	Metagabbro?	130	68	39	140	205	11	24	4	194	ND	ND	ND
01-ERD-138A	Denmark/Rupert	OTH-013	Grab	Metagabbro	185	104	45	599	129	9	17	5	195	0.9	ND	1.0
01-ERD-139A	Denmark/Rupert	OTH-013	Grab	Cannot be identified	2352	5706	146	1860	5846	8	12	5	47	64.5	53.6	21.1
01-ERD-139B	Denmark/Rupert	OTH-013	Grab	Olivine-gabbronorite	551	229	88	1582	442	8	15	ND	152	10.9	6.3	1.6
01-ERD-140A	Denmark/Rupert	OTH-013	Grab	Gabbronorite	267	101	49	544	306	12	11	2	302	2.1	0.9	ND
01-ERD-141A	Denmark/Rupert	OTH-013	Grab	Metagabbro	119	31	34	143	232	21	40	4	251	1.0	ND	1.0
01-ERD-142A	Denmark/Rupert	OTH-013	Grab	Serpentinite	1505	32	150	1865	678	7	26	ND	23	1.2	ND	ND
01-ERD-143A	Denmark/Rupert	OTH-013	Grab	Metapyroxenite	527	6	96	341	ND	18	18	4	66	2.2	ND	ND
01-ERD-144A	Denmark/Rupert	OTH-013	Grab	Metagabbro	56	155	39	81	183	19	229	3	382	ND	ND	ND
01-ERD-145A	Denmark/Rupert	OTH-013	Grab	Metapyroxenite	293	258	76	1245	491	11	9	2	522	3.7	1.4	1.8
01-ERD-146A	Denmark/Rupert	OTH-013	Grab	Metamelagabbro	203	82	63	249	293	19	33	4	185	1.7	ND	3.9
01-ERD-147A	Denmark/Rupert	OTH-013	Grab	Metagabbro-metamelagabbro	256	68	60	913	113	17	52	2	178	2.6	1.6	1.4
01-ERD-148A	Denmark/Rupert	OTH-013	Grab	Metagabbro	195	69	38	519	85	8	5	3	287	2.2	1.0	1.0
01-ERD-149A	Denmark/Rupert	OTH-013	Grab	Ol-gabbronorite/metapyroxenite	326	255	79	2071	307	14	28	4	101	12.4	9.0	8.0
01-ERD-150A	Denmark/Rupert	OTH-013	Grab	Metagabbro	156	135	72	300	202	16	35	6	120	15.1	21.4	3.3
01-ERD-151A	Denmark/Rupert	OTH-013	Grab	Metamelagabbro to pyroxenite	70	160	60	104	153	25	74	4	147	12.9	16.3	3.9
01-ERD-152A	Denmark/Rupert	OTH-013	Grab	Metagabbro or hb-gabbro	88	177	65	148	304	23	63	5	129	11.6	15.4	3.4
01-ERD-153A	Denmark/Rupert	OTH-013	Grab	Pyroxene-hornblende-gabbro	33	377	70	24	575	28	80	5	129	ND	ND	12.3
01-ERD-154A	Denmark/Rupert	OTH-013	Grab	Metagabbro-leucogabbro	205	60	58	308	46	4	ND	4	273	3.9	2.1	1.3
01-ERD-155A	Denmark/Rupert	OTH-013	Grab	Cannot be identified	21	32	15	71	66	14	119	20	365	ND	ND	ND
01-ERD-156A	Denmark/Rupert	OTH-013	Grab	Olivine-melagabbronorite	1360	89	152	3427	128	4	3	ND	58	4.8	1.7	ND
01-ERD-157A	Denmark/Rupert	OTH-013	Grab	Hb-gabbro or metagabbro	11	57	26	26	91	31	101	11	391	ND	ND	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name	Ni	Cu	Co	Cr	Se	Y	Zr	Rb	Sr	Pt	Pd	Au
				(Detection Limit-->)	2 ppm	2 ppm	12 ppm	4 ppm	7 ppb	1 ppm	3 ppm	2 ppm	2 ppm	0.5 ppb	0.9 ppb	0.9 ppb
01-ERD-158A	Denmark/Rupert	OTH-013	Grab	Metagabbro	56	46	33	87	75	13	23	5	312	ND	ND	ND
01-ERD-159A	Denmark/Rupert	OTH-013	Grab	Leucogabbro	20	34	17	66	52	14	116	23	374	ND	ND	ND
01-CAM-050A	Kakagi Sills	OTH-014	Grab	Hornblende-gabbro	ND	6	40	30	26	32	96	ND	119	ND	ND	ND
01-CAM-051A	Kakagi Sills	OTH-014	Grab	Metamelagabbro	73	56	44	228	61	18	45	13	210	7.1	6.8	ND
01-CAM-052A	Kakagi Sills	OTH-014	Grab	Metagabbro	34	63	49	32	46	26	59	40	105	10.6	13.2	ND
01-CAM-053A	Kakagi Sills	OTH-014	Grab	Tonalite	47	75	46	207	31	18	30	8	202	63.0	53.1	ND
01-CAM-054A	Kakagi Sills	OTH-014	Grab	Metadiorite to metagabbro	83	51	28	235	72	18	89	30	341	ND	ND	ND
01-CAM-055A	Kakagi Sills	OTH-014	Grab	Quartz-monzonite	10	57	46	32	315	38	91	2	82	ND	ND	ND
01-CAM-056A	Kakagi Sills	OTH-014	Grab	Quartz-diorite to quartz-gabbro	6	57	48	24	499	37	90	3	82	ND	ND	ND
01-CAM-057A	Kakagi Sills	OTH-014	Grab	Gabbro	54	84	43	930	ND	10	13	16	134	6.5	4.4	ND
01-CAM-058A	Kakagi Sills	OTH-014	Grab	Tonalite-gabbro	18	4	48	32	ND	38	67	5	92	1.9	3.7	ND
01-CAM-059A	Kakagi Sills	OTH-014	Grab	Pyroxenite	292	23	71	1802	43	6	7	6	59	2.5	2.7	ND
01-CAM-060A	Kakagi Sills	OTH-014	Grab	Plagioclase-bearing pyroxenite	219	24	58	1499	18	8	12	2	72	3.1	3.6	ND
01-CAM-061A	Kakagi Sills	OTH-014	Grab	Hornblende-pyroxenite	419	19	92	2406	24	10	19	3	19	1.0	ND	ND
01-CAM-062A	Kakagi Sills	OTH-014	Grab	Lherzolite-metalherzolite	523	8	109	2841	41	6	15	ND	25	3.1	ND	ND
01-CAM-063A	Kakagi Sills	OTH-014	Grab	Metahornblende-pyroxenite	435	18	97	1996	51	9	20	ND	19	1.7	1.3	ND
01-CAM-064A	Kakagi Sills	OTH-014	Grab	Metahornblende-pyroxenite	267	34	71	1899	30	10	17	ND	98	2.6	1.7	ND
01-CAM-065A	Kakagi Sills	OTH-014	Grab	Metaleucogabbro	65	27	36	405	86	50	110	4	104	0.9	ND	ND
01-CAM-066A	Kakagi Sills	OTH-014	Grab	Meta hb-pyroxenite/pyroxenite	252	32	65	1560	8	9	18	ND	30	3.3	3.7	ND
01-ERD-121A	Kakagi Sills	OTH-014	Grab	Metapyroxenite	342	80	82	2907	176	10	17	ND	21	4.6	5.0	ND
01-ERD-122A	Kakagi Sills	OTH-014	Grab	Metapyroxenite	431	43	99	2176	76	11	21	ND	12	3.5	3.2	2.9
01-ERD-123A	Kakagi Sills	OTH-014	Grab	Metagabbro	217	24	64	1204	221	14	28	ND	76	7.7	7.7	ND
01-ERD-124A	Kakagi Sills	OTH-014	Grab	Metamelagabbro	249	39	71	1468	41	13	29	3	135	5.3	6.2	3.2
01-ERD-125A	Kakagi Sills	OTH-014	Grab	Metapyroxenite	329	36	77	2954	55	11	18	ND	41	3.3	5.3	ND
01-ERD-125B	Kakagi Sills	OTH-014	Grab	Metamelagabbro/pyroxenite bx	294	52	81	3064	99	11	17	ND	76	3.1	3.5	ND
01-ERD-126A	Kakagi Sills	OTH-014	Grab	Metamelagabbro	97	53	48	398	305	9	11	ND	71	2.6	4.1	1.6
01-ERD-126B	Kakagi Sills	OTH-014	Grab	Porphy. Metabasalt/andesite	48	9	18	171	ND	9	83	4	302	0.7	ND	ND
01-ERD-127A	Kakagi Sills	OTH-014	Grab	Metamelagabbro	61	263	58	26	263	14	22	2	136	ND	ND	ND
01-ERD-129A	Kakagi Sills	OTH-014	Grab	Metamelagabbro to metagabbro	56	64	34	64	78	10	18	2	117	4.5	5.4	ND
01-ERD-130A	Kakagi Sills	OTH-014	Grab	Metapyroxenite	476	105	110	2431	210	11	21	5	37	4.4	4.2	ND
01-ERD-131A	Kakagi Sills	OTH-014	Grab	Metagabbro	119	42	51	932	91	11	15	4	70	2.8	2.7	ND
01-ERD-132A	Kakagi Sills	OTH-014	Grab	Metamelagabbro to metagabbro	87	39	47	272	102	10	14	2	77	2.4	2.1	ND
01-ERD-133A	Kakagi Sills	OTH-014	Grab	Metagabbro	70	24	48	78	47	10	14	6	102	5.2	3.8	ND
01-ERD-134A	Kakagi Sills	OTH-014	Grab	Calcite-quartz-chlorite schist	592	36	95	2897	60	7	11	2	65	4.6	2.8	1.0
01-ERD-135A	Kakagi Sills	OTH-014	Grab	Meta-olivine-pyroxenite	645	21	122	3271	62	7	10	12	35	3.8	3.9	1.2
01-RAS-053A	Kakagi Sills	OTH-014	Grab	Pyroxenite or websterite	323	51	84	3107	107	12	18	ND	27	4.0	4.7	1.2
01-RAS-054A	Kakagi Sills	OTH-014	Grab	Melagabbro-pyroxenite	405	64	92	3060	47	11	19	2	20	4.1	2.8	ND
01-RAS-055A	Kakagi Sills	OTH-014	Grab	Pyroxenite	475	57	109	2280	79	11	26	3	17	4.1	3.1	1.5

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name	Ni	Cu	Co	Cr	Se	Y	Zr	Rb	Sr	Pt	Pd	Au
				(Detection Limit-->)	2 ppm	2 ppm	12 ppm	4 ppm	7 ppb	1 ppm	3 ppm	2 ppm	2 ppm	0.5 ppb	0.9 ppb	0.9 ppb
01-RAS-056A	Kakagi Sills	OTH-014	Grab	Mesogabbro	225	45	71	1194	81	15	27	ND	104	6.9	6.7	1.2
01-RAS-057A	Kakagi Sills	OTH-014	Grab	Mesogabbro	444	93	111	2248	174	12	23	8	23	4.3	3.8	ND
01-RAS-058A	Kakagi Sills	OTH-014	Grab	Tonalite?	453	69	106	2403	58	11	21	3	28	4.4	3.9	ND
01-RAS-059A	Kakagi Sills	OTH-014	Grab	Mesogabbro	143	58	51	1307	45	11	15	3	106	3.7	4.6	ND
01-RAS-060A	Kakagi Sills	OTH-014	Grab	Mesogabbro	59	21	33	134	28	9	14	2	140	4.6	3.5	ND
01-RAS-061A	Kakagi Sills	OTH-014	Grab	Granite inclusion	ND	ND	ND	5	ND	42	329	51	100	ND	ND	ND
01-RAS-061B	Kakagi Sills	OTH-014	Grab	Tonalite	85	54	45	383	38	10	12	5	158	3.2	3.4	17.4
01-RAS-062A	Kakagi Sills	OTH-014	Grab	Mesogabbro	54	63	46	638	57	13	19	4	106	17.1	15.3	ND
01-RAS-063A	Kakagi Sills	OTH-014	Grab	Mesogabbro	56	112	51	478	89	15	23	4	126	17.1	13.2	ND
01-RAS-064A	Kakagi Sills	OTH-014	Grab	Quartz-gabbro to quartz-diorite	51	29	46	648	49	14	21	5	106	11.3	6.9	ND
01-RAS-065A	Kakagi Sills	OTH-014	Grab	Mesogabbro	40	111	51	63	464	24	62	ND	130	11.5	11.2	ND
01-RAS-067A	Kakagi Sills	OTH-014	Grab	Mesogabbro	53	109	49	339	34	14	24	5	94	20.9	23.1	1.1
01-RAS-068A	Kakagi Sills	OTH-014	Grab	Mesogabbro	52	54	43	798	16	14	26	3	108	8.6	1.9	ND
01-RAS-069A	Kakagi Sills	OTH-014	Grab	Gabbroic chilled margin or basalt	32	5	25	145	ND	18	108	2	1276	1.6	1.2	ND
01-RAS-070A	Kakagi Sills	OTH-014	Grab	Mesogabbro	59	48	46	629	29	13	22	3	131	10.6	7.1	ND
01-RAS-071A	Kakagi Sills	OTH-014	Grab	Quartz-gabbro to quartz-diorite	41	196	49	325	509	19	39	8	234	14.3	9.4	1.2
01-RAS-072A	Kakagi Sills	OTH-014	Grab	Leucogabbro	163	76	63	530	41	14	24	11	193	9.5	8.3	ND
01-RAS-073A	Kakagi Sills	OTH-014	Grab	Mesogabbro	60	34	46	735	11	13	23	23	201	7.2	4.5	ND
01-RAS-074A	Kakagi Sills	OTH-014	Grab	Wehrlite	821	66	162	2745	92	7	14	7	27	7.3	9.4	ND
01-RAS-075A	Kakagi Sills	OTH-014	Grab	Melagabbro	253	13	66	2240	10	7	22	5	87	2.0	2.8	ND
01-RAS-076A	Kakagi Sills	OTH-014	Grab	Harzburgite	598	31	120	2437	41	6	9	ND	28	2.5	2.1	ND
01-RAS-077A	Kakagi Sills	OTH-014	Grab	Harzburgite	586	30	123	2185	66	8	14	2	38	2.8	2.6	ND
01-RAS-078A	Kakagi Sills	OTH-014	Grab	Pyroxenite	240	32	83	1805	109	6	11	2	19	2.4	2.4	ND
01-RAS-079A	Kakagi Sills	OTH-014	Grab	Veined metagabbro altered	756	41	123	3347	40	5	8	5	18	1.7	1.0	ND
01-RAS-080A	Kakagi Sills	OTH-014	Grab	Dunite-lherzolite	888	17	133	3460	35	4	5	3	11	1.2	1.6	ND
01-CAM-067A	Pipestone Lake	OTH-015	Grab	Gabbro	103	113	55	334	119	25	54	7	152	5.2	4.3	ND
01-CAM-068A	Pipestone Lake	OTH-015	Grab	Gabbro	41	87	45	93	86	23	42	ND	122	ND	ND	ND
01-CAM-069A	Pipestone Lake	OTH-015	Grab	Hornblende-gabbro	71	108	54	359	940	26	59	4	101	6.5	6.4	ND
01-CAM-070A	Pipestone Lake	OTH-015	Grab	Hornblendite	34	408	57	39	507	25	49	ND	149	ND	ND	1.4
01-CAM-071A	Pipestone Lake	OTH-015	Grab	Pyroxene-olivine-gabbro	413	83	95	433	27	13	28	4	48	4.9	2.3	ND
01-CAM-072A	Pipestone Lake	OTH-015	Grab	Pyroxenite or melagabbro	118	106	59	295	113	22	44	ND	87	2.2	2.5	ND
01-CAM-073A	Pipestone Lake	OTH-015	Grab	Hornblende-gabbro	161	78	59	557	99	21	42	9	119	1.9	1.1	ND
01-CAM-074A	Pipestone Lake	OTH-015	Grab	Hornblende-gabbro	42	76	58	292	172	27	57	ND	55	ND	ND	ND
01-CAM-075A	Pipestone Lake	OTH-015	Grab	Hornblende-gabbro	33	3	46	49	ND	23	56	5	138	8.8	10.8	ND
01-CAM-076A	Pipestone Lake	OTH-015	Grab	Melagabbro/hornblende-gabbro	72	291	52	253	377	29	67	2	188	0.5	ND	ND
01-CAM-077A	Pipestone Lake	OTH-015	Grab	Gabbro?	45	69	53	150	625	22	60	11	131	8.9	9.3	ND
01-CAM-077B	Pipestone Lake	OTH-015	Grab	Gabbro?	57	288	53	22	558	31	72	3	145	1.4	ND	ND
01-CAM-078A	Pipestone Lake	OTH-015	Grab	Olivine mesocumulate	1223	22	131	5187	11	4	9	ND	6	ND	ND	4.8

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-CAM-079A	Pipestone Lake	OTH-015	Grab	Diorite or gabbro	24	2	43	40	ND	22	54	5	38	14.6	13.6	ND
01-CAM-080A	Pipestone Lake	OTH-015	Grab	Diorite to hornblende-gabbro	32	4	46	55	ND	21	43	ND	122	11.6	9.7	ND
01-CAM-081A	Pipestone Lake	OTH-015	Grab	Diorite to hornblende-gabbro	49	18	46	287	146	17	34	21	107	9.2	7.3	ND
01-CAM-082A	Pipestone Lake	OTH-015	Grab	Gabbro?	334	151	89	2285	169	8	11	ND	80	2.7	1.8	2.5
01-CAM-083A	Pipestone Lake	OTH-015	Grab	Gabbro to hornblende-gabbro	105	94	56	288	159	18	36	ND	140	12.6	15.8	1.0
01-CAM-084A	Pipestone Lake	OTH-015	Grab	Chlorite-calcite schist	44	71	42	119	237	39	110	ND	69	4.4	2.4	2.1
01-CAM-085A	Pipestone Lake	OTH-015	Grab	Olivine adcumulate	2349	5	135	6475	71	4	5	ND	5	3.1	2.2	ND
01-CAM-086A	Pipestone Lake	OTH-015	Grab	Olivine adcumulate	2588	5	147	3980	28	2	ND	ND	14	1.5	ND	ND
01-CMV-051A	Pipestone Lake	OTH-015	Grab	Serpentinite	1349	8	154	5449	20	3	9	ND	ND	6.7	3.0	ND
01-CMV-051B	Pipestone Lake	OTH-015	Grab	Serpentinite	1340	4	161	5376	ND	5	8	ND	2	3.1	3.1	ND
01-CMV-051C	Pipestone Lake	OTH-015	Grab	Altered ultramafic	1359	7	167	5402	ND	3	7	ND	ND	2.1	ND	ND
01-CMV-052A	Pipestone Lake	OTH-015	Grab	Calcite-chlorite-tremolite schist	75	2	40	707	ND	7	9	28	57	1.6	ND	ND
01-CMV-053A	Pipestone Lake	OTH-015	Grab	Talc schist	86	5	44	781	ND	4	7	73	34	1.6	ND	ND
01-CMV-053B	Pipestone Lake	OTH-015	Grab	Chlorite-carbonate schist	737	2	106	3934	ND	5	ND	ND	188	1.4	ND	ND
01-CMV-054A	Pipestone Lake	OTH-015	Grab	Talc-chlorite schist	717	13	137	2208	128	8	27	ND	27	1.9	ND	ND
01-CMV-055A	Pipestone Lake	OTH-015	Grab	Metamelagabbro	44	8	53	78	ND	21	57	13	83	10.2	10.0	ND
01-CMV-055B	Pipestone Lake	OTH-015	Grab	Metagabbro	31	12	50	44	16	26	75	12	130	4.3	ND	ND
01-CMV-055C	Pipestone Lake	OTH-015	Grab	Metamelagabbro to metagabbro	49	4	66	67	ND	24	89	11	122	12.5	8.0	ND
01-CMV-056A	Pipestone Lake	OTH-015	Grab	Chlorite-carbonate schist	255	18	77	171	19	8	17	ND	36	3.1	1.4	ND
01-CMV-057A	Pipestone Lake	OTH-015	Grab	Deformed metagabbro	196	17	55	69	17	13	26	ND	173	1.4	3.4	ND
01-RAS-081A	Pipestone Lake	OTH-015	Grab	Melamesogabbro	47	22	48	252	10	15	24	2	96	24.7	62.7	ND
01-RAS-082A	Pipestone Lake	OTH-015	Grab	Mesogabbro	32	66	50	35	515	26	66	3	119	18.6	23.6	ND
01-RAS-083A	Pipestone Lake	OTH-015	Grab	Mesogabbro	30	87	49	36	314	26	72	3	116	9.2	7.1	ND
01-RAS-084A	Pipestone Lake	OTH-015	Grab	Metamesogabbro	40	127	52	48	158	24	62	ND	134	16.0	15.1	ND
01-RAS-085A	Pipestone Lake	OTH-015	Grab	Mesogabbro-leucogabbro	27	17	37	31	12	29	88	4	85	16.2	11.4	ND
01-RAS-086A	Pipestone Lake	OTH-015	Grab	Leucogabbro	100	94	50	663	58	10	19	3	118	4.0	3.4	ND
01-RAS-087A	Pipestone Lake	OTH-015	Grab	Lherzolite	1161	5	161	3713	11	4	7	ND	4	2.4	ND	ND
01-RAS-088A	Pipestone Lake	OTH-015	Grab	Leucogabbro-mesogabbro	128	24	63	1179	11	7	9	ND	53	2.5	1.5	1.7
01-RAS-089A	Pipestone Lake	OTH-015	Grab	Gabbro?	719	122	119	3544	8	7	23	ND	23	10.2	10.6	1.5
01-RAS-090A	Pipestone Lake	OTH-015	Grab	Quartz-gabbro	39	42	61	87	130	19	56	5	53	10.1	10.3	ND
01-RAS-091A	Pipestone Lake	OTH-015	Grab	Hornblende-leucogabbro	50	26	35	351	61	13	37	13	87	5.1	6.4	ND
01-RAS-092A	Pipestone Lake	OTH-015	Grab	Quartz-gabbro	25	18	45	28	106	26	75	4	131	3.4	ND	ND
01-RAS-093A	Pipestone Lake	OTH-015	Grab	Leucogabbro	42	11	59	97	17	22	64	ND	95	8.3	9.1	ND
01-RAS-094A	Pipestone Lake	OTH-015	Grab	Quartz-metagabbro	17	267	54	42	184	28	78	ND	101	ND	1.0	ND
01-RAS-095A	Pipestone Lake	OTH-015	Grab	Meta-andesite or qz-metagabbro	42	98	58	77	1878	21	59	ND	99	11.0	8.7	7.5
01-RAS-096A	Pipestone Lake	OTH-015	Grab	Quartz-gabbro	31	173	48	40	154	16	38	ND	140	ND	ND	ND
01-RAS-097A	Pipestone Lake	OTH-015	Grab	Quartz-gabbro	21	184	44	25	167	19	50	ND	153	ND	ND	ND
01-RAS-098A	Pipestone Lake	OTH-015	Grab	Quartz-gabbro?	ND	16	50	19	496	43	108	ND	56	ND	ND	1.0

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-RAS-099A	Pipestone Lake	OTH-015	Grab	Hornblendite-metagabbro	463	805	89	81	1031	18	55	13	146	3.4	3.4	24.4
01-RAS-099B	Pipestone Lake	OTH-015	Grab	Metapyroxenite-hornblendite	197	299	72	56	286	19	61	20	176	ND	ND	7.9
01-CAM-039A	Caliper Lake	OTH-016	Grab	Granite	7	11	13	25	28	8	66	17	555	ND	ND	ND
01-CAM-040A	Caliper Lake	OTH-016	Grab	Quartz-rich granite	4	5	ND	32	29	3	99	13	364	ND	ND	ND
01-CAM-041A	Caliper Lake	OTH-016	Grab	Quartz-monzonite	17	47	26	35	88	26	12	41	1213	ND	ND	ND
01-CAM-042A	Caliper Lake	OTH-016	Grab	Monzonite	12	36	40	23	316	19	ND	42	1395	ND	ND	ND
01-CAM-043A	Caliper Lake	OTH-016	Grab	Pyroxene-hornblendite	175	36	54	1320	ND	15	28	21	453	ND	ND	ND
01-CAM-044A	Caliper Lake	OTH-016	Grab	Hornblende-pyroxenite	161	59	45	1119	31	20	35	12	471	0.6	ND	ND
01-CAM-045A	Caliper Lake	OTH-016	Grab	Monzodiorite	9	73	27	28	150	14	ND	16	2271	ND	ND	ND
01-CAM-046A	Caliper Lake	OTH-016	Grab	Monzodiorite	152	92	54	290	184	10	ND	9	628	ND	ND	ND
01-CAM-047A	Caliper Lake	OTH-016	Grab	Hornblende-pyroxenite	221	41	72	1448	63	12	8	4	451	12.6	20.0	ND
01-CAM-048A	Caliper Lake	OTH-016	Grab	Pyroxene-hornblendite	205	113	73	1350	52	17	39	5	320	11.6	7.1	ND
01-CAM-049A	Caliper Lake	OTH-016	Grab	Hornblende-pyroxenite	335	55	67	2673	119	12	27	8	229	0.6	ND	ND
01-CMV-049A	Dobie Intrusion	OTH-017	Grab	Metapyroxenite	554	24	86	2277	64	11	16	ND	43	25.8	26.3	ND
01-CMV-049B	Dobie Intrusion	OTH-017	Grab	Diabase	72	99	56	174	458	26	62	12	127	1.3	ND	ND
01-CMV-049D	Dobie Intrusion	OTH-017	Grab	Hornblende-gabbro to diorite	37	65	34	78	51	14	47	35	565	ND	ND	2.7
01-CMV-050A	Dobie Intrusion	OTH-017	Grab	Hornblende-gabbro to diorite	98	24	56	117	ND	7	4	11	703	9.8	24.1	1.1
01-CMV-058A	Lash-Carpenter	OTH-018	Grab	Gabbronorite	59	81	31	246	134	7	8	10	384	ND	ND	ND
01-CMV-059A	Lash-Carpenter	OTH-018	Grab	Metagabbro	67	65	29	182	96	7	ND	20	357	ND	ND	ND
01-CMV-060A	Lash-Carpenter	OTH-018	Grab	Gabbronorite	77	35	30	82	38	12	15	44	529	1.4	ND	ND
01-CMV-060B	Lash-Carpenter	OTH-018	Grab	Gabbro	22	35	13	83	54	17	105	63	1205	ND	ND	ND
01-CMV-061A	Lash-Carpenter	OTH-018	Grab	Monzonite	5	2	ND	ND	ND	27	218	72	285	ND	ND	ND
01-CMV-062A	Lash-Carpenter	OTH-018	Grab	Gabbronorite	95	82	63	89	131	14	44	4	450	ND	ND	ND
01-CMV-063A	Lash-Carpenter	OTH-018	Grab	Metagabbro	151	58	45	247	64	6	ND	6	469	ND	ND	ND
01-CMV-063B	Lash-Carpenter	OTH-018	Grab	Gabbronorite	165	138	43	204	138	6	ND	7	448	ND	ND	ND
01-CMV-064A	Lash-Carpenter	OTH-018	Grab	Metagabbro	153	67	34	199	69	6	ND	30	470	ND	ND	1.1
01-CMV-064B	Lash-Carpenter	OTH-018	Grab	Metamelagabbro	561	97	58	1331	182	20	93	6	1001	1.9	2.0	6.1
01-CMV-065A	Lash-Carpenter	OTH-018	Grab	Hornblende-gabbro	114	111	45	223	128	8	ND	9	485	1.4	ND	2.2
01-CMV-065B	Lash-Carpenter	OTH-018	Grab	Hornblende-gabbro	89	94	33	160	137	7	ND	13	517	ND	ND	ND
01-CAM-087A	Grassy Portage	OTH-019	Grab	Diorite or gabbro	6	6	29	26	ND	72	181	5	77	ND	ND	ND
01-CAM-088A	Grassy Portage	OTH-019	Grab	Melagabbro to gabbro	23	163	56	27	54	30	58	2	111	ND	ND	1.6
01-CAM-089A	Grassy Portage	OTH-019	Grab	Melagabbro	50	253	60	49	358	27	49	2	90	ND	ND	ND
01-CAM-090A	Grassy Portage	OTH-019	Grab	Melagabbro to hornblendite	77	144	68	131	180	28	76	8	100	ND	ND	ND
01-CAM-091A	Grassy Portage	OTH-019	Grab	Diorite to hornblende-gabbro	71	16	24	247	15	27	172	ND	211	1.4	ND	ND
01-CAM-092A	Grassy Portage	OTH-019	Grab	Gabbro to leucogabbro	16	40	27	16	58	7	40	13	171	ND	ND	ND
01-CAM-093A	Grassy Portage	OTH-019	Grab	Leucogabbro	92	38	40	26	139	11	16	9	134	1.7	ND	ND
01-CAM-094A	Grassy Portage	OTH-019	Grab	Melagabbro to gabbro	47	52	58	29	62	92	275	ND	41	ND	9.1	ND
01-CAM-095A	Grassy Portage	OTH-019	Grab	Gabbro	56	161	47	18	702	44	280	2	119	ND	ND	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-ERD-179A	Grassy Portage	OTH-019	Grab	Staurolite-chloritoid-garnet schist	43	16	12	946	119	18	101	42	185	5.5	4.3	ND
01-ERD-180A	Grassy Portage	OTH-019	Grab	Metagabbro-hb metagabbro	45	154	49	39	308	22	49	4	121	ND	ND	ND
01-ERD-181A	Grassy Portage	OTH-019	Grab	Metamelagabbro or hb-gabbro	109	13	49	548	34	19	25	15	134	16.3	12.6	ND
01-ERD-182A	Grassy Portage	OTH-019	Grab	Metagabbro	108	118	60	127	278	13	19	40	112	1.7	ND	ND
01-ERD-183A	Grassy Portage	OTH-019	Grab	Metagabbro to hb-gabbro	107	34	48	233	35	16	22	40	129	ND	ND	ND
01-RAS-100A	Grassy Portage	OTH-019	Grab	Metahornblende gabbro	67	35	60	108	52	19	30	7	109	6.8	16.3	ND
01-RAS-100B	Grassy Portage	OTH-019	Grab	Anorthosite gabbro	39	79	39	63	256	12	26	10	144	19.7	27.6	1.0
01-RAS-101A	Grassy Portage	OTH-019	Grab	Meta-anorthositic gabbro	60	264	62	73	257	26	30	3	125	1.5	ND	2.0
01-RAS-102A	Grassy Portage	OTH-019	Grab	Meta-anorthositic gabbro	39	50	44	72	143	15	20	4	146	1.7	1.1	ND
01-RAS-103A	Grassy Portage	OTH-019	Grab	Metamesogabbro	43	122	49	73	313	16	30	7	106	7.0	8.5	2.2
01-RAS-104A	Grassy Portage	OTH-019	Grab	Metamesogabbro	23	84	40	24	251	22	78	17	227	ND	ND	ND
01-RAS-105A	Grassy Portage	OTH-019	Grab	Meta-anorthositic gabbro	35	29	34	65	34	16	22	11	180	2.2	1.2	ND
01-RAS-106A	Grassy Portage	OTH-019	Grab	Metamesogabbro	173	84	53	403	266	26	91	6	209	ND	ND	ND
01-RAS-106B	Grassy Portage	OTH-019	Grab	Cannot be identified	193	1594	62	161	18474	8	88	12	50	2.9	17.0	53.7
01-RAS-107A	Grassy Portage	OTH-019	Grab	Metamesogabbro	210	288	70	114	2396	34	45	7	127	0.6	2.3	ND
01-RAS-108A	Grassy Portage	OTH-019	Grab	Metamesogabbro	85	11	49	41	81	175	47	23	142	ND	ND	ND
01-RAS-109A	Grassy Portage	OTH-019	Grab	Megacrys. meta-anorth. gabbro	36	21	33	80	81	12	27	17	155	ND	ND	1.8
01-RAS-110A	Grassy Portage	OTH-019	Grab	Meta-anorthositic gabbro	35	7	34	51	21	16	47	8	136	2.2	ND	ND
01-ERD-160A	Bad Vermilion	OTH-020	Grab	Metagabbro	130	106	50	420	222	20	43	6	139	1.7	ND	ND
01-ERD-161A	Bad Vermilion	OTH-020	Grab	Metagabbro	138	79	55	430	42	20	42	13	102	1.7	ND	ND
01-ERD-162A	Bad Vermilion	OTH-020	Grab	Metagabbro	43	49	49	282	85	17	44	3	95	7.2	7.4	ND
01-ERD-163A	Bad Vermilion	OTH-020	Grab	Metagabbro	10	3	36	22	ND	35	111	13	147	ND	ND	ND
01-ERD-164A	Bad Vermilion	OTH-020	Grab	Metagabbro	48	41	52	357	108	25	64	4	91	10.9	10.7	ND
01-ERD-165A	Bad Vermilion	OTH-020	Grab	Metagabbro	130	113	63	419	504	19	46	5	140	9.0	10.1	1.9
01-ERD-166A	Bad Vermilion	OTH-020	Grab	Metagabbro	50	4	42	349	ND	19	54	2	196	11.4	6.2	ND
01-ERD-167A	Bad Vermilion	OTH-020	Grab	Metagabbro	35	146	46	31	146	25	73	14	198	ND	ND	3.6
01-ERD-168A	Bad Vermilion	OTH-020	Grab	Metagabbro	33	183	43	27	302	25	73	16	145	ND	ND	3.4
01-ERD-169A	Bad Vermilion	OTH-020	Grab	Cannot be identified	130	126	51	428	69	21	43	2	149	1.5	ND	1.9
01-ERD-170A	Bad Vermilion	OTH-020	Grab	Metagabbro	81	78	49	182	37	22	129	7	206	0.7	ND	ND
01-ERD-171A	Bad Vermilion	OTH-020	Grab	Metagabbro	34	185	54	24	504	30	76	2	96	14.0	ND	6.5
01-ERD-172A	Bad Vermilion	OTH-020	Grab	Leucometagabbro/gabbro	40	10	22	89	ND	22	140	26	190	ND	ND	ND
01-ERD-173A	Bad Vermilion	OTH-020	Grab	Metagabbro	50	130	40	288	87	21	35	5	91	ND	ND	1.9
01-ERD-174A	Bad Vermilion	OTH-020	Grab	Metagabbro or hb-gabbro	19	3	43	26	ND	37	100	ND	146	45.7	ND	ND
01-ERD-175A	Bad Vermilion	OTH-020	Grab	Hb-gabbro or metagabbro	53	4	35	234	ND	20	52	5	168	8.2	8.6	ND
01-ERD-176A	Bad Vermilion	OTH-020	Grab	Metasediment	17	75	17	25	101	29	212	25	218	ND	ND	2.1
01-ERD-177A	Bad Vermilion	OTH-020	Grab	Cannot be identified	118	65	49	492	119	13	26	7	101	15.6	12.1	ND
01-ERD-178A	Bad Vermilion	OTH-020	Grab	Metagabbro	76	25	53	381	30	23	59	2	137	10.4	10.6	ND
01-ERD-184A	Mountdew Lake	OTH-021	Grab	Metamelagabbro	140	70	52	983	132	28	66	ND	97	5.0	8.6	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-ERD-185A	Mountdew Lake	OTH-021	Grab	Metagabbro	4	30	76	ND	1874	41	132	9	144	ND	ND	8.3
01-ERD-185B	Mountdew Lake	OTH-021	Grab	Lamprophyre dike?	19	14	ND	49	16	12	171	34	689	ND	ND	ND
01-ERD-186A	Mountdew Lake	OTH-021	Grab	Quartz-metagabbro	ND	10	42	12	146	59	149	5	107	ND	ND	ND
01-ERD-187A	Mountdew Lake	OTH-021	Grab	Cannot be identified	27	45	29	67	100	29	193	72	617	1.1	ND	ND
01-ERD-188A	Mountdew Lake	OTH-021	Grab	Metapyroxenite	109	184	53	123	169	18	34	6	73	ND	ND	ND
01-MAH-011A	Nabish Lake	OTH-022	Grab	Hb-melagabbro to amphibolite	80	251	69	50	1081	8	ND	5	198	ND	ND	1.7
01-MAH-012A	Nabish Lake	OTH-022	Grab	Leucogabbro	106	14	25	218	89	8	13	6	244	0.7	1.0	ND
01-MAH-012B	Nabish Lake	OTH-022	Grab	Melagabbro	238	10	70	722	34	9	12	6	128	ND	ND	ND
01-MAH-013A	Nabish Lake	OTH-022	Grab	Metagabbro	201	17	63	756	52	7	13	7	163	1.4	1.2	ND
01-MAH-014A	Nabish Lake	OTH-022	Grab	Dunite	1911	43	178	5925	135	5	20	ND	11	7.0	12.3	ND
01-MAH-015A	Nabish Lake	OTH-022	Grab	Pyroxenite	545	163	91	415	280	4	6	9	58	3.9	7.2	2.8
01-MAH-016A	Nabish Lake	OTH-022	Grab	Metagabbro	266	701	70	525	2486	5	ND	4	232	9.3	19.4	4.1
01-MAH-017A	Nabish Lake	OTH-022	Grab	Metapyroxenite	422	72	99	311	75	7	19	2	70	0.9	ND	ND
01-MAH-018A	Pike Lake	OTH-023	Grab	Int. to felsic metavolcanic	ND	20	13	8	27	67	383	67	102	ND	ND	ND
01-MAH-019A	Pike Lake	OTH-023	Grab	Metagabbro or metadiorite	38	227	21	182	317	25	118	29	178	1.7	ND	ND
01-MAH-019B	Pike Lake	OTH-023	Grab	Feldspar-quartz porphyry	ND	19	ND	13	18	7	101	46	310	ND	ND	ND
01-MAH-020A	Pike Lake	OTH-023	Grab	Metagabbro	108	21	33	161	21	10	41	38	304	ND	ND	ND
01-MAH-021A	Pike Lake	OTH-023	Grab	Metagabbro	68	80	38	295	64	11	46	20	220	2.6	3.2	ND
01-MAH-021B	Pike Lake	OTH-023	Grab	Metagabbro	12	38	30	12	37	37	153	30	227	0.5	ND	ND
01-MAH-021C	Pike Lake	OTH-023	Grab	Metagabbro	22	70	43	146	113	17	46	12	191	2.0	ND	1.6
01-MAH-021D	Pike Lake	OTH-023	Grab	Metagabbro	5	120	33	21	111	21	68	19	264	ND	ND	1.8
01-MAH-021E	Pike Lake	OTH-023	Grab	Metagabbro	78	15	33	131	ND	5	13	17	257	ND	ND	ND
01-MAH-022A	Pike Lake	OTH-023	Grab	Metamelagabbro	54	503	90	33	308	13	32	13	240	ND	ND	ND
01-MAH-023A	Pike Lake	OTH-023	Grab	Metavolcanic	18	40	ND	48	91	21	67	28	230	ND	ND	ND
01-MAH-024A	Pike Lake	OTH-023	Grab	Metamelagabbro	ND	121	75	17	382	17	42	14	180	ND	ND	ND
01-RAS-141A	Pike Lake	OTH-023	Grab	Quartz-diorite	ND	10	ND	ND	ND	72	428	58	99	ND	ND	ND
01-RAS-141B	Pike Lake	OTH-023	Grab	Tonalite?	ND	12	14	7	ND	82	405	65	68	ND	ND	ND
01-RAS-142A	Pike Lake	OTH-023	Grab	Diorite	13	73	37	22	162	19	43	14	233	ND	ND	ND
01-RAS-143A	Pike Lake	OTH-023	Grab	Mesogabbro	150	50	49	486	19	10	35	18	189	1.3	2.1	ND
01-RAS-144A	Pike Lake	OTH-023	Grab	Quartz-diorite	98	47	33	257	203	14	94	34	216	ND	ND	ND
01-RAS-145A	Pike Lake	OTH-023	Grab	Quartz-diorite to leucogabbro	100	20	29	136	8	10	46	80	262	0.6	ND	ND
01-RAS-146A	Pike Lake	OTH-023	Grab	Quartz-diorite to quartz-gabbro	86	43	18	312	55	26	71	27	247	2.3	2.2	ND
01-ERD-236A	Cobb/Sturgeon	OTH-024	Grab	Metapyroxenite to metagabbro	119	141	59	274	143	22	52	3	104	0.7	ND	ND
01-ERD-237A	Cobb/Sturgeon	OTH-024	Grab	Metamelagabbro	102	159	57	304	371	26	60	3	141	1.6	ND	ND
01-ERD-238A	Cobb/Sturgeon	OTH-024	Grab	Metamelagabbro/pyroxenite	81	159	55	148	297	25	58	4	104	ND	ND	ND
GWS-99-24	Handcuff Lake	OTH-025	Grab	Melagabbro	205	78	56	356	212	33	115	6	145	6.2	7.7	ND
GWS-99-25	Handcuff Lake	OTH-025	Grab	Melagabbro	69	132	48	41	219	6	ND	2	342	ND	ND	ND
GWS-99-26	Handcuff Lake	OTH-025	Grab	Melagabbro	31	127	63	42	231	7	4	ND	255	ND	ND	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name	Ni	Cu	Co	Cr	Sc	Y	Zr	Rb	Sr	Pt	Pd	Au
				(Detection Limit-->)	2 ppm	2 ppm	12 ppm	4 ppm	7 ppb	1 ppm	3 ppm	2 ppm	2 ppm	0.5 ppb	0.9 ppb	0.9 ppb
GWS-99-27	Handcuff Lake	OTH-025	Grab	Leucogabbro	48	25	23	90	16	5	3	2	381	ND	ND	ND
GWS-99-28	Handcuff Lake	OTH-025	Grab	Mesogabbro	62	50	33	86	96	4	ND	10	349	ND	ND	1.7
GWS-99-29	Handcuff Lake	OTH-025	Grab	Melagabbro	104	160	52	62	335	5	ND	5	328	ND	ND	0.9
GWS-99-30	Handcuff Lake	OTH-025	Grab	Mesogabbro	125	46	45	150	82	6	ND	8	275	ND	ND	ND
GWS-99-31	Handcuff Lake	OTH-025	Grab	Melagabbro	93	103	57	77	274	12	8	ND	281	ND	ND	ND
GWS-99-32	Handcuff Lake	OTH-025	Grab	Melagabbro	31	85	50	37	191	7	4	ND	319	ND	ND	ND
GWS-99-33	Handcuff Lake	OTH-025	Grab	Melagabbro	48	75	41	39	121	7	4	5	366	ND	ND	ND
GWS-99-34	Handcuff Lake	OTH-025	Grab	Mesogabbro	18	40	31	29	47	15	21	3	405	ND	ND	ND
P-00-010	Samuels Lake	OTH-026	Grab	Diorite	4	55	ND	20	87	13	284	101	1259	ND	ND	1.9
P-00-043	Samuels Lake	OTH-026	Grab	Diorite	7	553	15	35	999	15	150	44	600	ND	ND	8.7
P-99-0-088	Samuels Lake	OTH-026	Core	Clinopyroxenite	283	441	76	1729	487	10	43	11	169	133.0	237.2	13.3
P-99-0-095	Samuels Lake	OTH-026	Core	Wehrlite	2030	3656	297	847	6885	7	17	8	91	21.1	18.7	19.7
P-99-0-099	Samuels Lake	OTH-026	Core	Wehrlite	9784	7219	577	946	22748	6	9	4	44	185.2	216.8	71.0
P-99-0-101	Samuels Lake	OTH-026	Core	Clinopyroxenite	712	1085	188	798	2468	6	20	ND	208	7.9	7.9	7.8
P-99-138	Samuels Lake	OTH-026	Grab	Hornblendite	69	101	82	291	218	22	32	18	337	3.1	4.9	ND
P-00-058	McQuat/Stawson	OTH-027	Grab	Clinopyroxenite	201	261	127	913	609	8	23	2	229	1.5	1.7	2.1
P-99-009	Nym/Bergman	OTH-028	Grab	Hornblendite	552	1012	105	2147	1290	9	21	5	118	51.7	53.1	21.1
P-99-010	Nickelbee/Fire L.	OTH-029	Grab	Wehrlite	879	1158	176	534	2116	8	15	3	77	3.0	5.7	5.7
P-99-001	Eva Lake	OTH-030	Grab	Clinopyroxenite	339	143	80	1909	161	10	25	ND	136	8.2	15.0	ND
P-99-113	Kawene Lake	OTH-031	Grab	Clinopyroxenite	387	43	92	2251	59	9	22	10	153	2.6	2.1	6.7
P-99-114	Kawene Lake	OTH-031	Grab	Clinopyroxenite	370	61	102	2736	105	7	14	11	169	26.0	25.1	3.2
P-99-117	Kawene Lake	OTH-031	Grab	Clinopyroxenite	181	114	69	1093	139	16	50	25	287	8.8	7.8	ND
P-99-122	Kawene Lake	OTH-031	Grab	Clinopyroxenite	260	102	87	1810	254	11	20	13	201	10.7	12.0	0.9
P-99-033	Abiwin Lake	OTH-033	Grab	Clinopyroxenite	836	1726	90	1454	2560	10	18	2	86	11.8	9.3	3.2
P-99-034	Abiwin Lake	OTH-033	Grab	Hornblendite	838	1691	86	1731	4200	8	21	10	77	24.1	15.8	19.4
P-99-027	Mud Lake	OTH-034	Grab	Hornblendite	89	155	75	399	149	20	48	20	354	ND	ND	1.1
P-99-028	Mud Lake	OTH-034	Grab	Clinopyroxenite	129	132	91	576	184	15	37	20	199	0.6	1.0	1.8
P-99-060	North Elbow Lake	OTH-035	Grab	Olivine-websterite	301	175	86	1502	484	10	21	11	140	5.2	6.5	2.1
P-99-084	North Elbow Lake	OTH-035	Grab	Clinopyroxenite	265	303	84	1154	868	14	32	9	124	2.6	2.3	3.0
P-99-174	South Elbow Lake	OTH-035	Grab	Gabbro	83	52	41	374	59	16	48	63	945	1.5	2.2	2.1
01-CMV-105A	Shebandowan Mine	OTH-036	Grab	Peridotite or dunite	859	650	119	2146	5814	10	20	2	8	85.4	305.4	23.2
01-CMV-105B	Shebandowan Mine	OTH-036	Grab	Peridotite	954	127	95	2305	581	10	21	ND	9	19.7	52.6	5.0
01-CMV-106A	Shebandowan Mine	OTH-036	Grab	Peridotite or pyroxenite	3202	1932	168	1478	7333	15	30	6	19	100.2	490.7	100.1
01-CMV-107A	Shebandowan Mine	OTH-036	Grab	Wehrlite to dunite	1429	27	164	3508	85	7	13	3	6	3.8	11.0	1.2
01-CMV-108A	Shebandowan Mine	OTH-036	Grab	Wehrlite to dunite	1245	7	166	3291	37	7	14	4	4	1.7	2.4	ND
01-CMV-109A	Shebandowan Mine	OTH-036	Grab	Dunite	4547	1790	228	5499	3075	2	ND	ND	16	105.1	347.8	12.0
01-CMV-110A	Shebandowan Mine	OTH-036	Grab	Metagabbro	45	123	58	51	219	36	98	6	98	12.8	11.7	2.8
01-CMV-111A	Shebandowan Mine	OTH-036	Grab	Metagabbro	36	192	44	43	130	38	116	4	247	11.9	10.6	2.3

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-CMV-112A	Shebandowan Mine	OTH-036	Grab	Metagabbro	86	70	53	630	46	28	71	3	150	7.8	7.3	1.1
01-ARR-001A	Haines Gabbro	OTH-037	Grab	Metabasalt	38	98	50	41	220	41	114	3	155	ND	ND	ND
01-ARR-002A	Haines Gabbro	OTH-037	Grab	Metagabbro	120	31	47	652	117	25	57	4	108	3.1	2.6	ND
01-ARR-003A	Haines Gabbro	OTH-037	Grab	Metagabbro	54	92	44	313	253	32	83	ND	136	7.8	7.3	ND
01-ARR-004A	Haines Gabbro	OTH-037	Grab	Metapyroxenite/melagabbro	215	52	77	1767	43	28	63	3	73	3.3	3.6	ND
01-ARR-005A	Haines Gabbro	OTH-037	Grab	Metagabbro	101	51	44	798	105	27	65	7	117	3.4	3.2	ND
01-ARR-006A	Haines Gabbro	OTH-037	Grab	Metagabbro	65	141	45	224	175	26	58	ND	115	5.2	2.4	ND
01-ARR-007A	Haines Gabbro	OTH-037	Grab	Metagabbro	165	40	38	628	20	22	56	ND	179	5.5	3.4	ND
01-ARR-008A	Haines Gabbro	OTH-037	Grab	Metagabbro to metamelagabbro	42	92	53	61	86	31	79	ND	104	ND	ND	ND
01-ARR-009A	Haines Gabbro	OTH-037	Grab	Metagabbro	108	157	53	107	72	11	12	ND	91	ND	ND	ND
01-ARR-010A	Haines Gabbro	OTH-037	Grab	Anorthositic gabbro	67	144	41	77	35	11	15	2	120	ND	ND	ND
01-ARR-011A	Haines Gabbro	OTH-037	Grab	Metagabbro	91	10	34	854	27	14	27	45	202	7.7	4.6	ND
01-ARR-012A	Haines Gabbro	OTH-037	Grab	Metamelagabbro	53	105	50	159	220	38	114	10	142	ND	ND	1.1
01-ARR-013A	Haines Gabbro	OTH-037	Grab	Meta-anorthosite	21	82	15	171	126	5	ND	85	265	12.0	9.1	ND
01-ARR-014A	Haines Gabbro	OTH-037	Grab	Meta-leucogabbro	56	30	22	225	30	4	ND	79	252	1.0	ND	ND
01-ARR-015A	Haines Gabbro	OTH-037	Grab	Metavolcanic	26	12	14	185	43	3	ND	31	233	3.1	3.4	ND
01-ARR-016A	Haines Gabbro	OTH-037	Grab	Metagabbro	237	13	35	475	12	5	19	21	289	0.9	ND	ND
01-ARR-016B	Haines Gabbro	OTH-037	Grab	Meta-anorthosite	24	556	23	44	844	13	17	45	196	ND	ND	6.9
01-MAH-031A	Crystal Lake	OTH-038	Grab	Gabbro to olivine-gabbro	84	276	46	36	240	40	234	41	531	2.0	7.2	2.0
01-MAH-032A	Crystal Lake	OTH-038	Grab	Gabbro to olivine-gabbro	82	173	45	327	191	30	126	16	252	5.9	4.5	1.6
01-MAH-033A	Crystal Lake	OTH-038	Grab	Ol-gabbro to ol-gabbronorite	415	136	75	215	170	19	64	6	245	5.3	7.1	1.3
01-MAH-034A	Crystal Lake	OTH-038	Grab	Gabbro	93	113	49	100	93	34	179	23	312	1.2	1.3	ND
01-MAH-035A	Crystal Lake	OTH-038	Grab	Felsic metavolcanic	33	17	12	132	25	17	126	60	76	ND	ND	ND
01-MAH-036A	Crystal Lake	OTH-038	Grab	Olivine-gabbro	192	115	59	280	121	17	64	13	323	4.7	4.4	ND
01-MAH-036B	Crystal Lake	OTH-038	Grab	Olivine-gabbro to gabbro	89	261	54	51	200	39	229	41	562	2.4	8.7	3.5
01-MAH-037A	Crystal Lake	OTH-038	Grab	Olivine-gabbro to troctolite	274	136	76	259	127	11	34	26	299	13.9	10.0	7.2
01-MAH-038A	Crystal Lake	OTH-038	Grab	Gabbro	48	94	26	940	114	16	39	52	579	75.1	61.1	2.9
01-MAH-039A	Crystal Lake	OTH-038	Grab	Olivine-gabbro/leucotroctolite	213	84	52	139	91	13	44	40	417	1.8	3.9	ND
01-MAH-040A	Crystal Lake	OTH-038	Grab	Gabbronorite to gabbro	132	189	62	138	149	28	104	21	277	4.9	4.4	1.5
01-GRD-003A	Hele Township	OTH-039	Grab	Websterite to lherzolite	810	65	149	1998	58	12	108	27	141	14.1	7.1	ND
01-GRD-004A	Hele Township	OTH-039	Grab	Wehrlite	803	227	147	1812	83	12	93	15	254	4.7	1.5	1.0
01-GRD-005A	Hele Township	OTH-039	Grab	Wehrlite to mela-olivine-gabbro	1068	93	181	2492	52	7	50	13	97	6.1	2.9	ND
01-GRD-006A	Hele Township	OTH-039	Grab	Wehrlite	1227	26	178	2040	19	7	55	11	54	6.7	4.3	ND
01-GRD-007A	Hele Township	OTH-039	Grab	Ol-gabbro to pg-bearing wehrlite	797	156	133	1400	35	12	104	14	239	6.7	2.7	1.1
01-GRD-008A	Hele Township	OTH-039	Grab	Clinopyroxenite	437	28	97	1150	84	13	92	35	102	8.4	5.9	ND
01-GRD-009A	Hele Township	OTH-039	Grab	Melagabbro	242	24	69	967	96	16	127	22	229	12.4	7.0	1.9
01-GRD-010A	Hele Township	OTH-039	Grab	Pg-clinopyroxenite to melagabbro	297	144	101	1220	110	17	106	27	192	10.8	5.4	4.5
01-GRD-011A	Hele Township	OTH-039	Grab	Gabbro to olivine-gabbro	107	202	56	175	229	27	73	15	158	3.9	17.8	3.2

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Sc 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-GRD-012A	Hele Township	OTH-039	Grab	Gabbro	137	6	54	739	26	19	144	24	92	24.3	6.1	3.2
01-RAS-333A	Seagull Wolf Mtn.	OTH-040	Core	Quartz-gabbro	3	18	13	ND	55	37	408	14	390	ND	ND	ND
01-RAS-334A	Seagull Wolf Mtn.	OTH-040	Core	Mesogabbro	12	149	60	ND	291	23	169	34	550	ND	ND	ND
01-RAS-335A	Seagull Wolf Mtn.	OTH-040	Core	Olivine-websterite	622	36	128	2160	135	9	41	9	39	3.9	ND	ND
01-RAS-336A	Seagull Wolf Mtn.	OTH-040	Core	Olivine-websterite	778	10	122	2367	20	8	44	25	25	3.3	7.4	ND
01-RAS-337A	Seagull Wolf Mtn.	OTH-040	Core	Olivine-websterite	600	26	107	2564	15	8	28	6	51	9.2	20.5	ND
01-RAS-338A	Seagull Wolf Mtn.	OTH-040	Core	Dunite	1641	137	236	4389	263	5	37	18	10	34.7	43.2	ND
01-RAS-339A	Seagull Wolf Mtn.	OTH-040	Core	Lherzolite	1122	9	198	3699	80	6	36	9	7	17.3	13.4	ND
01-RAS-340A	Seagull Wolf Mtn.	OTH-040	Core	Lherzolite-wehrlite	638	8	130	1997	9	6	15	ND	25	2.7	ND	ND
01-RAS-341A	Seagull Wolf Mtn.	OTH-040	Core	Olivine-gabbro	56	215	45	116	198	34	99	21	188	3.4	21.5	3.2
01-RAS-342A	Seagull Wolf Mtn.	OTH-040	Core	Olivine-gabbro	183	180	67	89	253	24	71	10	161	7.4	19.0	2.1
01-RAS-343A	Seagull Wolf Mtn.	OTH-040	Core	Olivine-websterite	565	11	115	2048	19	6	11	ND	40	2.5	ND	ND
01-RAS-344A	Seagull Wolf Mtn.	OTH-040	Core	Wehrlite-dunite	852	11	145	2403	54	6	29	14	15	4.1	5.4	ND
01-RAS-345A	Seagull Wolf Mtn.	OTH-040	Core	Dunite	1318	15	161	5462	106	4	25	14	9	43.5	26.8	ND
01-RAS-346A	Seagull Wolf Mtn.	OTH-040	Core	Dunite	1193	9	179	4720	27	4	27	14	18	16.2	22.3	ND
01-RAS-347A	Seagull Wolf Mtn.	OTH-040	Core	Wehrlite-dunite	1303	14	180	4860	72	4	24	11	25	10.5	9.1	ND
01-RAS-348A	Seagull Wolf Mtn.	OTH-040	Core	Dunite	1523	8	181	5421	50	4	25	16	41	16.6	15.7	ND
01-RAS-349A	Seagull Wolf Mtn.	OTH-040	Core	Dunite-wehrlite	1517	38	205	7006	64	4	30	15	23	4.2	6.2	ND
01-RAS-350A	Seagull Wolf Mtn.	OTH-040	Core	Dunite	1622	330	201	4385	244	5	31	17	12	56.4	67.8	7.6
01-RAS-351A	Seagull Wolf Mtn.	OTH-040	Core	Lherzolite	1767	646	193	5735	1221	5	39	25	42	172.9	242.4	21.0
01-RAS-352A	Seagull Wolf Mtn.	OTH-040	Core	Lherzolite	1522	50	186	4574	74	5	41	15	125	8.1	5.4	ND
01-RAS-353A	Seagull Wolf Mtn.	OTH-040	Core	Olivine-melagabbro	1206	193	152	2856	143	9	78	17	96	11.0	6.8	3.4
01-RAS-354A	Seagull Wolf Mtn.	OTH-040	Core	Olivine-gabbro	1135	162	144	3016	243	11	80	30	92	11.8	9.8	3.6
01-RAS-355A	Seagull Wolf Mtn.	OTH-040	Core	Wehrlite	1232	126	135	3653	245	11	82	21	159	22.2	24.4	3.9
01-RAS-356A	Seagull Wolf Mtn.	OTH-040	Core	Olivine-gabbro	1508	3329	120	3499	2614	13	109	24	303	666.6	725.7	73.8
01-RAS-357A	Seagull Wolf Mtn.	OTH-040	Core	Mesogabbro	114	588	77	206	674	22	146	31	619	19.1	7.3	7.3
01-RAS-358A	Seagull Wolf Mtn.	OTH-040	Core	Melagabbro	205	75	70	823	148	21	171	27	628	12.9	7.0	ND
01-RAS-359A	Seagull Wolf Mtn.	OTH-040	Core	Melagabbro	132	163	71	497	224	24	169	34	352	30.4	26.9	1.9
01-RAS-360A	Seagull Wolf Mtn.	OTH-040	Core	Olivine-clinopyroxenite	375	58	87	1846	62	12	56	13	189	2.3	1.3	ND
01-RAS-361A	Seagull Wolf Mtn.	OTH-040	Core	Dunite-wehrlite	1010	11	165	4221	19	9	74	18	15	51.2	50.6	ND
01-RAS-362A	Seagull Wolf Mtn.	OTH-040	Core	Dunite	1290	13	163	5265	58	4	35	18	9	56.6	49.0	ND
01-RAS-363A	Seagull Wolf Mtn.	OTH-040	Core	Dunite	1277	14	174	5851	111	5	39	14	8	12.8	7.1	ND
01-RAS-364A	Seagull Wolf Mtn.	OTH-040	Core	Dunite	1262	25	175	5492	246	6	82	23	14	2.5	2.1	ND
01-RAS-365A	Seagull Wolf Mtn.	OTH-040	Core	Wehrlite	1256	17	165	4164	39	4	33	23	10	28.6	8.5	ND
01-RAS-366A	Seagull Wolf Mtn.	OTH-040	Core	Lherzolite	1422	17	171	4691	110	8	50	26	19	10.9	9.0	ND
01-RAS-367A	Seagull Wolf Mtn.	OTH-040	Core	Lherzolite	1372	45	171	3758	296	8	68	28	29	24.6	24.2	ND
01-RAS-368A	Seagull Wolf Mtn.	OTH-040	Core	Wehrlite	1264	95	148	4030	173	11	93	39	61	41.1	39.9	ND
01-CMV-131A	Buck Lake	OTH-041	Grab	Pg-clinopyroxenite to melagabbro	974	16	80	49	23	8	37	5	137	5.8	4.7	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-CMV-132A	Buck Lake	OTH-041	Grab	Tonalite or trondhjemite	5	3	ND	117	20	5	46	21	442	ND	ND	ND
01-CMV-133A	Buck Lake	OTH-041	Grab	Metamelagabbro pyroxenite	417	44	60	251	80	10	46	41	568	34.9	32.9	ND
01-CMV-134A	Buck Lake	OTH-041	Grab	Hb-leucogabbro/metaleucogabbro	121	10	32	2075	16	7	ND	35	742	2.3	3.5	ND
01-CMV-135A	Buck Lake	OTH-041	Grab	Metamelagabbro	540	54	57	187	108	17	42	22	344	3.4	3.4	ND
01-CMV-136A	Buck Lake	OTH-041	Grab	Metaleucogabbro	61	33	30	212	153	10	ND	37	809	ND	ND	ND
01-CMV-137A	Buck Lake	OTH-041	Grab	Melagabbro	368	18	61	2672	64	22	46	21	269	12.9	19.5	ND
01-CMV-138A	Buck Lake	OTH-041	Grab	Metamelagabbro	272	70	55	435	132	16	29	13	413	11.2	11.3	ND
01-CMV-139A	Buck Lake	OTH-041	Grab	Metapyroxenite	6036	3266	139	98	9592	8	27	17	196	1057.7	2017.1	126.9
01-CMV-140A	Buck Lake	OTH-041	Grab	Metapyroxenite/melagabbro	3637	2020	154	86	6930	12	37	22	233	1280.7	2731.4	170.5
01-RAS-316A	Tib Lake	OTH-042	Core	Clinopyroxenite	4015	2734	147	2607	7230	4	4	8	54	576.0	1369.1	267.4
01-RAS-317A	Tib Lake	OTH-042	Core	Gabbronorite-pyroxenite	529	75	92	2571	157	7	12	8	59	8.3	13.1	5.2
01-RAS-318A	Tib Lake	OTH-042	Core	Gabbronorite	530	62	86	2521	81	6	10	5	73	3.9	7.0	6.0
01-RAS-319A	Tib Lake	OTH-042	Core	Gabbronorite-metagabbro	516	239	91	1636	669	17	44	26	67	29.6	73.7	15.3
01-RAS-320A	Tib Lake	OTH-042	Core	Mesogabbro	633	485	83	1072	1782	14	64	36	121	131.0	403.1	27.3
01-RAS-321A	Tib Lake	OTH-042	Core	Lherzolite	1526	33	142	4629	62	5	10	ND	21	29.8	53.3	3.4
01-RAS-322A	Tib Lake	OTH-042	Core	Mesogabbro	240	171	41	597	321	3	6	25	268	1.8	1.6	2.4
01-RAS-323A	Tib Lake	OTH-042	Core	Gabbro to gabbronorite	1041	56	139	467	280	3	5	ND	29	21.7	53.8	11.1
01-RAS-324A	Tib Lake	OTH-042	Core	Pyroxenite	516	124	105	1434	402	7	13	2	11	26.7	65.3	0.8
01-RAS-325A	Tib Lake	OTH-042	Core	Websterite	1376	809	108	2264	1936	5	6	6	62	99.1	235.8	44.9
01-RAS-326A	Tib Lake	OTH-042	Core	Mesogabbro	72	51	41	404	176	6	3	7	362	ND	ND	ND
01-RAS-327A	Tib Lake	OTH-042	Core	Mesogabbro	113	68	63	836	249	7	6	4	262	ND	ND	ND
01-RAS-328A	Tib Lake	OTH-042	Core	Pyroxenite to gabbro	143	58	53	217	155	7	10	19	232	5.7	9.0	ND
01-RAS-329A	Tib Lake	OTH-042	Core	Mesogabbro	249	35	57	364	104	9	10	16	151	6.3	6.9	ND
01-RAS-330A	Tib Lake	OTH-042	Core	Mesogabbro	139	62	53	330	196	7	11	7	206	ND	ND	ND
01-RAS-331A	Tib Lake	OTH-042	Grab	Mesogabbro	50	153	66	463	267	4	ND	4	346	2.6	ND	ND
01-RAS-332A	Tib Lake	OTH-042	Grab	Olivine websterite	542	27	94	644	54	6	7	ND	50	9.5	14.1	ND
01-RAS-147A	Raffle Lake West	OTH-043	Grab	Mesogabbro	131	99	47	90	86	24	30	13	231	ND	ND	ND
01-RAS-148A	Raffle Lake West	OTH-043	Grab	Quartz-gabbro	103	142	43	972	196	14	17	ND	167	ND	ND	ND
01-RAS-149A	Raffle Lake West	OTH-043	Grab	Metamesogabbro	113	167	52	64	329	13	19	2	64	ND	ND	3.4
01-RAS-150A	Raffle Lake West	OTH-043	Grab	Metamesogabbro	97	148	43	27	176	11	12	2	156	ND	ND	ND
01-RAS-151A	Raffle Lake West	OTH-043	Grab	Metamesogabbro	134	80	48	111	118	16	27	ND	65	6.9	5.3	ND
01-RAS-152A	Raffle Lake West	OTH-043	Grab	Mesogabbro	170	86	58	148	291	19	28	ND	62	6.0	4.8	ND
01-RAS-153A	Raffle Lake East	OTH-043	Grab	Melagabbro	164	29	50	165	54	16	22	ND	60	41.7	52.9	ND
01-RAS-154A	Raffle Lake East	OTH-043	Grab	Melagabbro	147	7	52	189	ND	14	20	4	30	41.0	49.4	ND
01-RAS-155A	Raffle Lake East	OTH-043	Grab	Mesomelagabbro	164	32	53	120	11	20	41	ND	75	ND	ND	ND
01-RAS-155B01	Raffle Lake East	OTH-043	Grab	Pyroxenite	162	56	61	168	402	37	78	2	30	ND	ND	ND
01-RAS-155B02	Raffle Lake East	OTH-043	Grab	Melamesogabbro-pyroxenite	180	72	69	105	312	36	75	2	28	ND	ND	ND
01-RAS-156A	Raffle Lake East	OTH-043	Grab	Metamesogabbro	157	55	49	177	81	21	44	2	79	2.4	2.2	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-RAS-157A	Ruffo Lake East	OTH-043	Grab	Mesogabbro	155	8	53	217	ND	13	16	2	61	158.2	192.8	7.4
01-RAS-158A	Ruffo Lake East	OTH-043	Grab	Mesogabbro	126	19	39	219	27	13	17	3	110	56.0	49.9	ND
01-RAS-159A	Ruffo Lake East	OTH-043	Grab	Mesogabbro	112	29	45	162	72	20	38	6	87	3.3	2.1	ND
01-RAS-160A	Ruffo Lake East	OTH-043	Grab	Mesogabbro	42	167	55	244	110	25	89	4	188	ND	ND	ND
01-RAS-161A	Ruffo Lake East	OTH-043	Grab	Mesogabbro	92	93	67	123	73	40	129	10	74	ND	ND	ND
01-CMV-094A	Roaring/Allely L.	OTH-044	Grab	Granodiorite	3	ND	ND	128	ND	6	62	53	471	ND	ND	ND
01-CMV-095A	Roaring/Allely L.	OTH-044	Grab	Monzogranite	ND	ND	ND	5	ND	3	76	46	428	ND	ND	ND
01-CMV-096A	Roaring/Allely L.	OTH-044	Grab	Metagabbro	30	56	41	38	136	25	33	50	1183	ND	1.6	ND
01-CMV-096B	Roaring/Allely L.	OTH-044	Grab	Oxide-apatite-pyroxenite	38	125	48	42	475	15	21	35	1067	ND	ND	ND
01-CMV-097A	Roaring/Allely L.	OTH-044	Grab	Gabbronorite	191	14	57	685	28	16	29	8	395	5.2	7.9	ND
01-CMV-098A	Roaring/Allely L.	OTH-044	Grab	Gabbronorite	89	272	37	35	354	7	ND	8	1212	ND	ND	7.0
01-CMV-098B1	Roaring/Allely L.	OTH-044	Grab	Gabbronorite	173	412	39	224	357	10	10	24	654	22.2	79.9	26.2
01-CMV-098B2	Roaring/Allely L.	OTH-044	Grab	Gabbronorite	461	716	49	227	1629	11	23	20	619	95.8	401.7	61.5
01-CMV-098C	Roaring/Allely L.	OTH-044	Grab	Olivine-gabbronorite	255	70	63	2079	43	12	43	10	484	4.1	4.2	ND
01-CMV-099A	Roaring/Allely L.	OTH-044	Grab	Gabbronorite	210	184	58	251	187	18	18	15	629	32.9	47.2	4.5
01-CMV-100A	Roaring/Allely L.	OTH-044	Grab	Gabbronorite	116	43	37	295	59	10	ND	51	1140	0.9	ND	ND
01-CMV-101A	Roaring/Allely L.	OTH-044	Grab	Olivine-gabbronorite	57	79	57	78	196	12	16	23	820	ND	ND	ND
01-CMV-103A	Roaring/Allely L.	OTH-044	Grab	Leucogabbronorite	83	104	30	83	83	6	32	17	1230	ND	ND	3.1
01-CMV-104A	Roaring/Allely L.	OTH-044	Grab	Monzogabbro	51	8	13	82	ND	13	181	44	1230	ND	ND	ND
01-CMV-146A	Roaring/Allely L.	OTH-044	Grab	Monzogabbro	1441	868	44	484	1138	11	50	28	941	67.1	469.9	22.7
01-MAH-027A	Roaring/Allely L.	OTH-044	Grab	Metagabbro/hornblende gabbro	18	114	58	37	248	7	ND	21	528	ND	ND	ND
01-MAH-028A	Roaring/Allely L.	OTH-044	Grab	Granodiorite to tonalite	ND	18	ND	18	41	9	100	38	352	ND	ND	ND
01-MAH-029A	Roaring/Allely L.	OTH-044	Grab	Granite to granodiorite	ND	ND	ND	13	20	4	62	53	355	ND	ND	ND
01-MAH-030A	Roaring/Allely L.	OTH-044	Grab	Quartz-monzonite	40	36	31	65	66	21	70	45	602	0.6	ND	ND
01-CMV-093A	Logan Sills	OTH-045	Grab	Diabase	95	179	32	140	175	25	77	13	166	12.2	15.7	3.0
01-CMV-102A	Logan Sills	OTH-045	Grab	Diabase	102	217	53	132	258	31	105	19	178	9.2	17.9	3.7
01-MAH-025A	Empire Lake	OTH-046	Grab	Granite to granodiorite	ND	ND	ND	5	26	6	154	257	135	ND	ND	ND
01-MAH-026A	Empire Lake	OTH-046	Grab	Granodiorite gneiss	ND	ND	ND	9	34	4	84	200	85	ND	ND	ND
01-CAM-127A	Chrome Lake	OTH-047	Grab	Serpentinite	1116	290	236	4945	13	3	ND	ND	ND	1.7	2.0	220.0
01-CAM-128A	Chrome Lake	OTH-047	Grab	Olivine-gabbronorite	59	8	44	100	204	28	208	62	301	ND	ND	ND
01-CAM-129A	Chrome Lake	OTH-047	Grab	Serpentinite	916	10	61	3768	18	5	3	ND	ND	0.7	1.0	ND
01-CAM-130A	Chrome Lake	OTH-047	Grab	Serpentinite	1037	34	158	6622	ND	5	ND	ND	6	ND	ND	ND
01-CAM-131A	Chrome Lake	OTH-047	Grab	Serpentinite	1450	42	158	6030	ND	3	3	ND	ND	1.9	1.4	ND
01-CAM-132A	Chrome Lake	OTH-047	Grab	Serpentinite	1198	681	289	6127	93	2	ND	ND	68	0.7	ND	1.4
01-CAM-133A	Chrome Lake	OTH-047	Grab	Serpentinite	1303	71	395	6442	11	4	ND	ND	20	0.5	1.2	1.0
01-CAM-134A	Chrome Lake	OTH-047	Grab	Serpentinite	1492	460	410	7152	33	3	ND	ND	4	ND	ND	ND
01-CAM-135A	Chrome Lake	OTH-047	Grab	Chromite	1305	13	294	314046	24	2	ND	ND	208	5.4	23.4	ND
01-CAM-135B	Chrome Lake	OTH-047	Grab	Serpentinite	2998	30	176	20415	8	9	ND	7	99	ND	28.0	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-CAM-136A	Chrome Lake	OTH-047	Grab	Serpentinite	2836	3	127	10987	60	5	ND	ND	19	0.6	2.2	2.1
01-CAM-137A	Chrome Lake	OTH-047	Grab	Serpentinite	2340	67	248	193790	ND	4	ND	ND	ND	ND	ND	ND
01-CAM-138A	Puddy Lake	OTH-047	Grab	Serpentinite	3094	3	160	1503	33	3	ND	ND	13	ND	ND	ND
01-CAM-139A	Puddy Lake	OTH-047	Grab	Serpentinite	1317	ND	207	1113	77	2	ND	ND	18	ND	ND	ND
01-CAM-140A	Puddy Lake	OTH-047	Grab	Pyroxenite-serpentinite	1905	ND	266	1230	7	2	ND	ND	ND	ND	ND	ND
01-CAM-141A	Puddy Lake	OTH-047	Grab	Serpentinite	844	7	69	5178	14	3	ND	ND	80	ND	ND	1.2
01-CAM-142A	Puddy Lake	OTH-047	Grab	Serpentinite	2318	ND	31	1240	ND	8	ND	ND	13	ND	ND	ND
01-CAM-143A	Puddy Lake	OTH-047	Grab	Serpentinite	1606	ND	35	6236	31	2	ND	ND	2	0.5	ND	ND
01-CAM-144A	Puddy Lake	OTH-047	Grab	Serpentinite	2270	ND	101	3505	95	4	ND	ND	ND	0.8	ND	ND
01-CAM-145A	Puddy Lake	OTH-047	Grab	Serpentinite	2244	3	56	2827	13	4	ND	ND	ND	ND	ND	ND
01-CAM-146A	Puddy Lake	OTH-047	Grab	Peridotite	1668	184	152	3451	2283	3	3	ND	10	3.0	4.1	ND
01-CAM-147A	Puddy Lake	OTH-047	Grab	Granite	24	104	23	67	131	16	136	33	548	ND	ND	ND
01-CAM-148A	Puddy Lake	OTH-047	Grab	Serpentinite	1651	25	142	6580	16	4	6	ND	2	1.6	2.2	ND
01-CMV-141A	Killala Lake	OTH-048	Grab	Pg-bearing clinopyroxenite	344	1063	199	102	3354	37	17	6	233	28.0	24.9	12.8
01-CMV-142A	Killala Lake	OTH-048	Grab	Olivine-gabbro to troctolite	152	264	85	464	571	9	ND	5	1153	11.1	10.2	2.1
01-CMV-142B	Killala Lake	OTH-048	Grab	Troctolite	190	206	104	371	305	6	ND	13	1021	8.0	8.0	1.4
01-CMV-143A	Killala Lake	OTH-048	Grab	Troctolite	108	171	57	25	595	25	663	118	820	48.4	25.8	2.2
01-CMV-144A	Killala Lake	OTH-048	Grab	Melagabbro	339	260	84	614	143	39	218	5	1287	1.3	0.9	ND
01-CMV-144B	Killala Lake	OTH-048	Grab	Olivine-gabbro	108	37	76	124	53	11	32	29	1099	7.8	3.4	ND
01-CMV-145A	Killala Lake	OTH-048	Grab	Leucogabbro	49	20	34	33	77	22	139	56	805	0.9	2.9	ND
01-CMV-121A	Coldwell Complex	OTH-049	Grab	Ol-gabbronorite to ol-gabbro	232	5095	156	28	9619	27	ND	2	1022	7.0	2.5	4.2
01-CMV-122A	Coldwell Complex	OTH-049	Grab	Anorthosite	18	149	17	ND	153	1	ND	32	2132	ND	ND	ND
01-CMV-122B	Coldwell Complex	OTH-049	Grab	Anorthosite	2	21	12	ND	24	9	7	42	1465	3.8	5.4	ND
01-CMV-123A	Coldwell Complex	OTH-049	Grab	Gabbro to metagabbro	26	260	50	ND	474	26	ND	30	1362	ND	ND	ND
01-CMV-124A1	Coldwell Complex	OTH-049	Grab	Metagabbro	4	65	38	ND	1046	50	99	4	90	ND	ND	ND
01-CMV-124A2	Coldwell Complex	OTH-049	Grab	Websterite to pg-websterite	15	42	26	ND	509	48	74	13	108	ND	ND	ND
01-CMV-125A	Coldwell Complex	OTH-049	Grab	Mafic metavolcanic metabasalt	37	135	46	4	102	52	338	82	569	1.1	ND	ND
01-CMV-126A	Coldwell Complex	OTH-049	Grab	Olivine-gabbro	242	4398	80	251	1888	30	73	32	605	2.3	2.0	12.8
01-CMV-127A	Coldwell Complex	OTH-049	Grab	Gabbro to gabbronorite	14	30	54	ND	229	38	4	ND	3003	ND	ND	ND
01-CMV-128A	Coldwell Complex	OTH-049	Grab	Ol-gabbro to ol-gabbronorite	679	10574	84	195	6504	13	34	11	614	608.2	2089.2	246.6
01-CMV-128B	Coldwell Complex	OTH-049	Grab	Gabbro?	192	208	70	481	167	16	16	4	614	1.4	4.0	ND
01-CMV-129A	Coldwell Complex	OTH-049	Grab	Olivine gabbronorite	163	36	84	55	19	5	ND	3	819	114.4	11.4	ND
01-CMV-130A	Coldwell Complex	OTH-049	Grab	Olivine bearing gabbro	66	139	36	144	85	16	21	7	777	8.8	8.3	1.8
01-RAS-231A	Musher Lake Pluton	OTH-050	Grab	Granodiorite	19	22	ND	58	13	12	131	60	1057	ND	1.2	ND
01-RAS-232A	White Lake	OTH-051	Grab	Metamesogabbro	169	35	37	629	31	16	23	35	862	1.6	1.8	ND
01-RAS-233A	White Lake	OTH-051	Grab	Metamesogabbro	232	52	35	793	35	22	108	42	611	1.7	2.1	ND
01-RAS-234A	White Lake	OTH-051	Grab	Metamelagabbro	98	42	51	588	109	28	57	40	432	ND	ND	ND
01-RAS-237A	White Lake	OTH-051	Grab	Metamelagabbro	51	116	41	185	405	29	71	2	120	ND	ND	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name	Ni	Cu	Co	Cr	Se	Y	Zr	Rb	Sr	Pt	Pd	Au
				(Detection Limit-->)	2 ppm	2 ppm	12 ppm	4 ppm	7 ppb	1 ppm	3 ppm	2 ppm	2 ppm	0.5 ppb	0.9 ppb	0.9 ppb
01-RAS-238A	White Lake	OTH-051	Grab	Metamelagabbro	105	211	35	343	698	18	75	5	281	ND	ND	ND
01-RAS-239A	White Lake	OTH-051	Grab	Metamelagabbro	67	161	32	274	116	19	41	3	109	3.2	ND	ND
01-RAS-240A	White Lake	OTH-051	Grab	Metamelagabbro	83	196	43	290	218	18	35	ND	119	3.6	ND	1.2
01-RAS-241A	White Lake	OTH-051	Grab	Metamelagabbro	64	123	45	211	35	27	62	5	128	5.6	4.3	ND
01-RAS-242A	White Lake	OTH-051	Grab	Metamelagabbro	111	49	49	1272	134	18	35	9	109	4.1	4.1	ND
01-RAS-243A	White Lake	OTH-051	Grab	Metamelagabbro	48	102	34	131	99	31	107	4	118	9.8	9.7	2.5
01-RAS-244A	White Lake	OTH-051	Grab	Dunite to lherzolite	2290	8	134	2245	24	3	ND	ND	3	1.0	ND	ND
01-RAS-245A	White Lake	OTH-051	Grab	Metamelagabbro	121	29	58	1054	66	17	41	ND	178	12.8	12.1	ND
01-RAS-246A	White Lake	OTH-051	Grab	Metamesogabbro	655	15	98	3181	ND	5	25	105	81	ND	ND	ND
01-RAS-247A	White Lake	OTH-051	Grab	Metamelagabbro	167	88	68	1064	67	20	52	15	359	1.9	1.4	ND
01-RAS-248A	White Lake	OTH-051	Grab	Metamelagabbro	202	80	55	1182	89	18	62	21	380	1.7	1.5	ND
01-RAS-249A	White Lake	OTH-051	Grab	Metahornblendite	461	38	69	2630	94	12	36	5	568	ND	ND	ND
01-RAS-250A	White Lake	OTH-051	Grab	Metameso-leucogabbro	54	28	33	250	26	21	44	22	1145	2.3	2.6	ND
01-RAS-251A	White Lake	OTH-051	Grab	Metahornblendite	329	461	63	589	400	12	48	45	183	3.2	4.4	1.5
01-RAS-252A	White Lake	OTH-051	Grab	Metahornblendite	715	31	75	1904	31	10	46	28	365	1.1	ND	ND
01-RAS-235A	White River	OTH-052	Grab	Hornblendite	116	68	47	1413	24	22	105	57	481	ND	ND	ND
01-RAS-236A	White River	OTH-052	Grab	Hornblendite	97	35	41	1019	8	22	91	59	668	2.5	3.7	ND
01-CMV-113A	Shabotik	OTH-053	Grab	Amphibolite	183	15	57	784	ND	16	54	59	449	1.3	1.7	ND
01-CMV-114A	Shabotik	OTH-053	Grab	Metagabbro	66	9	34	495	14	16	100	109	1418	1.6	1.7	ND
01-CMV-115A	Bulldozer	OTH-054	Grab	Qz-diorite or hornblende-diorite	18	90	30	30	ND	20	ND	39	1928	1.5	1.6	ND
01-CMV-115B	Bulldozer	OTH-054	Grab	Amphibolite	48	78	70	59	33	62	178	163	221	2.0	1.7	ND
01-CMV-116A1	Bulldozer	OTH-054	Grab	Metamelagabbro to metagabbro	89	1931	91	81	314	24	11	68	1387	6.2	7.5	0.9
01-CMV-116A2	Bulldozer	OTH-054	Grab	Metagabbro to metaleucogaboro	50	378	55	71	1747	18	ND	44	1993	4.7	4.0	ND
01-CMV-116B	Bulldozer	OTH-054	Grab	Hornblendite	71	112	63	219	258	39	96	5	330	6.5	5.7	ND
01-CMV-117A	Bulldozer	OTH-054	Grab	Gabbro	82	164	55	135	250	28	87	27	177	4.9	2.5	3.2
01-CMV-117B	Bulldozer	OTH-054	Grab	Metapyroxenite or hornblendite	107	1230	95	208	52	34	91	8	360	9.2	7.8	20.6
01-CMV-117C	Bulldozer	OTH-054	Grab	Metagabbro/hb-gabbro	26	137	37	77	72	17	5	95	1552	1.8	1.7	1.1
01-CMV-117D	Bulldozer	OTH-054	Grab	Metapyroxenite	81	265	92	271	67	43	110	5	116	7.9	3.7	3.9
01-GRD-001A	Bulldozer	OTH-054	Grab	Metamela hb gab.to amphibolite	65	68	64	95	38	46	126	68	588	0.6	ND	ND
01-GRD-001B	Bulldozer	OTH-054	Grab	Metagabbro to hb-gabbro	48	42	44	52	21	34	143	107	996	0.6	ND	ND
01-GRD-002A	Bulldozer	OTH-054	Grab	Gabbro	47	201	54	92	500	37	127	33	185	2.5	1.1	ND
01-GRD-002B	Bulldozer	OTH-054	Grab	Metagabbro to hb-gabbro	65	38	56	192	18	22	101	59	488	ND	ND	ND
01-GRD-002C	Bulldozer	OTH-054	Grab	Metapyroxenite	75	18	51	449	ND	19	72	21	267	4.7	2.0	ND
01-CMV-118A	Moshkinabi	OTH-055	Grab	Metagabbro	111	68	49	1015	49	8	3	11	111	7.6	5.4	ND
01-CMV-118B	Moshkinabi	OTH-055	Grab	Meta-melagabbro	441	821	79	1103	2047	8	ND	7	123	59.8	218.8	11.2
01-CMV-118C	Moshkinabi	OTH-055	Grab	Amphibolite	453	15	97	1128	40	5	ND	ND	6	5.8	15.5	ND
01-CMV-118D	Moshkinabi	OTH-055	Grab	Meta-melagabbro/amphibolite	117	215	52	966	704	8	5	2	6	24.9	57.2	8.1
01-CMV-118E	Moshkinabi	OTH-055	Grab	Metagabbro	498	1620	80	801	2289	8	ND	9	162	61.4	279.1	38.2

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name	Ni	Cu	Co	Cr	Se	Y	Zr	Rb	Sr	Pt	Pd	Au
				(Detection Limit-->)	2 ppm	2 ppm	12 ppm	4 ppm	7 ppb	1 ppm	3 ppm	2 ppm	2 ppm	0.5 ppb	0.9 ppb	0.9 ppb
01-CMV-118F	Moshkinabi	OTH-055	Grab	Metagabbro	668	2485	108	923	2901	8	ND	4	98	78.0	331.6	29.1
01-CMV-118G	Moshkinabi	OTH-055	Grab	Metagabbro	134	34	43	288	90	23	76	2	123	1.9	2.1	ND
01-CMV-118H	Moshkinabi	OTH-055	Grab	Meta-melagabbro	450	1131	105	2162	1338	14	12	4	75	89.4	329.4	5.3
01-CMV-118I	Moshkinabi	OTH-055	Grab	Massive sulphide	13294	3306	589	54	3548	2	5	3	98	307.1	2511.4	9.3
01-CMV-119A	Moshkinabi	OTH-055	Grab	Meta-leucogabbro	99	31	37	104	75	5	ND	2	238	3.7	7.8	ND
01-CMV-119B	Moshkinabi	OTH-055	Grab	Dunite or peridotite	1009	13	185	140	58	3	ND	ND	4	ND	ND	ND
01-CMV-119C	Moshkinabi	OTH-055	Grab	Actinolite and talc schist	507	10	106	152	ND	2	ND	ND	21	5.9	20.7	2.7
01-CMV-119D	Moshkinabi	OTH-055	Grab	Meta-melagabbro	455	4	97	114	ND	4	ND	3	33	3.6	3.2	ND
01-CMV-119E	Moshkinabi	OTH-055	Grab	Altered olivine-gabbronorite	634	64	142	293	204	4	ND	ND	3	3.3	3.9	ND
01-CMV-119F	Moshkinabi	OTH-055	Grab	Metagabbro	592	1466	81	1174	2151	6	ND	6	118	109.0	274.3	15.7
01-CMV-119G	Moshkinabi	OTH-055	Grab	Amphibolite	354	63	86	391	20	4	ND	5	28	22.6	136.7	ND
01-CMV-119H	Moshkinabi	OTH-055	Grab	Amphibolite	547	506	94	237	1690	12	7	ND	5	130.0	353.9	ND
01-CMV-119I	Moshkinabi	OTH-055	Grab	Amphibolite	312	17	63	1870	20	10	7	ND	119	9.5	13.9	ND
01-CMV-120A	Moshkinabi	OTH-055	Grab	Metagabbro	257	336	60	1163	384	6	ND	8	93	15.0	43.4	1.7
01-CMV-120B	Moshkinabi	OTH-055	Grab	Actinolite schist	313	121	73	1193	22	7	6	2	19	32.1	35.2	ND
01-CAM-116A	McVicar Lake	OTH-056	Grab	Hornblende-gabbro	48	28	26	48	121	15	51	5	271	ND	ND	ND
01-CAM-117A	McVicar Lake	OTH-056	Grab	Monzogranite	ND	8	ND	16	ND	38	280	39	66	ND	ND	ND
01-CAM-118A	McVicar Lake	OTH-056	Grab	Quartz-gabbro to melagabbro	ND	ND	26	16	36	30	272	14	128	ND	ND	ND
01-CAM-119A	McVicar Lake	OTH-056	Grab	Hb-gabbro or qz-gabbro	63	25	41	42	182	12	42	20	213	ND	ND	ND
01-CAM-120A	McVicar Lake	OTH-056	Grab	Quartz-monzogabbro	54	5	30	95	8	17	41	19	210	ND	ND	ND
01-CAM-121A	McVicar Lake	OTH-056	Grab	Hornblende-gabbro	14	ND	18	41	ND	26	140	2	217	0.9	ND	ND
01-CAM-122A	McVicar Lake	OTH-056	Grab	Gabbro	56	84	59	156	157	21	30	7	177	ND	ND	ND
01-CAM-123A	McVicar Lake	OTH-056	Grab	Chl-qz-carbonate shear veins	37	ND	23	619	ND	16	43	82	55	ND	ND	ND
01-CAM-124A	McVicar Lake	OTH-056	Grab	Hornblende-gabbro	9	102	50	25	200	33	142	8	293	ND	ND	ND
01-CAM-125A	McVicar Lake	OTH-056	Grab	Hornblende-gabbro	99	202	34	128	122	9	37	17	222	1.6	ND	2.6
01-CAM-126A	McVicar Lake	OTH-056	Grab	Hornblende-gabbro	67	83	36	123	83	12	39	11	242	ND	ND	ND
01-RAS-176A	McVicar Lake	OTH-056	Grab	Quartz-gabbro	42	57	32	210	131	18	57	3	291	3.0	2.3	ND
01-RAS-177A	McVicar Lake	OTH-056	Grab	Mesogabbro	ND	33	32	17	84	18	ND	2	236	ND	ND	ND
01-RAS-178A	McVicar Lake	OTH-056	Grab	Quartz-diorite	84	151	39	423	156	16	52	4	265	1.4	ND	ND
01-RAS-179A	McVicar Lake	OTH-056	Grab	Quartz-diorite to leucogabbro	11	33	27	38	69	28	54	33	277	ND	ND	ND
01-RAS-180A	McVicar Lake	OTH-056	Grab	Mesogabbro	47	30	41	111	ND	16	80	40	218	ND	ND	ND
01-RAS-181A	McVicar Lake	OTH-056	Grab	Mesogabbro	ND	27	34	10	180	29	46	20	352	ND	ND	ND
01-RAS-182A	McVicar Lake	OTH-056	Grab	Leucogabbro	160	35	46	372	24	7	25	19	261	0.6	ND	ND
01-RAS-183A	McVicar Lake	OTH-056	Grab	Mesogabbro	101	7	42	251	ND	17	46	28	199	ND	ND	ND
01-RAS-184A	McVicar Lake	OTH-056	Grab	Mesogabbro	75	104	31	333	37	11	51	22	175	2.9	1.0	ND
01-RAS-185A	McVicar Lake	OTH-056	Grab	Meso-leucogabbro	22	114	30	97	37	15	61	11	278	1.1	ND	ND
01-RAS-186A	McVicar Lake	OTH-056	Grab	Leuco to mesogabbro	ND	26	ND	11	837	32	2320	13	347	ND	ND	ND
01-RAS-187A	McVicar Lake	OTH-056	Grab	Mesogabbro	235	143	45	465	163	4	ND	3	223	7.7	1.5	3.1

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-RAS-188A	McVicar Lake	OTH-056	Grab	Mesogabbro	168	147	44	959	188	5	ND	ND	180	7.5	1.9	7.6
01-RAS-189A	McVicar Lake	OTH-056	Grab	Leucogabbro	212	58	63	193	43	11	50	30	232	0.7	ND	ND
01-RAS-190A	McVicar Lake	OTH-056	Grab	Quartz-gabbro	104	113	56	159	324	11	7	19	217	0.9	ND	ND
01-RAS-191A	McVicar Lake	OTH-056	Grab	Mesogabbro-hornblende gabbro	18	78	48	100	195	6	ND	12	279	ND	ND	ND
01-RAS-192A	McVicar Lake	OTH-056	Grab	Mesogabbro	69	117	48	126	69	6	ND	ND	215	ND	ND	ND
01-RAS-193A	McVicar Lake	OTH-056	Grab	Mesogabbro	80	178	33	133	180	5	ND	3	190	ND	ND	ND
01-RAS-194A	McVicar Lake	OTH-056	Grab	Leucogabbro	181	36	41	676	66	4	ND	4	212	4.4	8.6	ND
01-RAS-195A	McVicar Lake	OTH-056	Grab	Meso-leucogabbro	113	54	28	462	56	2	ND	3	289	3.7	1.5	ND
01-RAS-196A	McVicar Lake	OTH-056	Grab	Anorthosite to leucogabbro	40	61	37	67	141	2	ND	15	369	ND	ND	ND
01-RAS-197A	McVicar Lake	OTH-056	Grab	Mesogabbro	404	252	100	335	319	7	15	34	202	1.0	ND	ND
84-GRS-0001	Kawashe Lake	OTH-057	Grab		141	144	53	116	122	12	18	2	108	10.5	13.5	142.5
84-GRS-0051	Kawashe Lake	OTH-057	Grab		16	34	23	35	20	16	182	9	556	ND	1.2	2.3
84-GRS-1059	Kawashe Lake	OTH-057	Grab		29	137	50	27	72	23	86	20	54	0.8	ND	8.9
84-GRS-1060	Kawashe Lake	OTH-057	Grab		313	147	71	724	86	10	15	3	105	10.0	10.5	2.7
84-GRS-1062	Kawashe Lake	OTH-057	Grab		239	119	64	191	225	20	30	6	136	9.3	11.8	3.1
84-GRS-1063	Kawashe Lake	OTH-057	Grab		156	134	56	337	144	21	52	4	95	13.9	15.7	7.9
84-GRS-1064	Kawashe Lake	OTH-057	Grab		269	70	59	604	83	10	19	17	162	20.1	39.2	4.2
84-GRS-1067	Kawashe Lake	OTH-057	Grab		157	147	51	297	213	20	47	26	143	4.9	6.1	3.5
84-GRS-1084	Kawashe Lake	OTH-057	Grab		11	6	12	28	ND	10	138	96	414	ND	0.9	1.7
84-GRS-1094	Kawashe Lake	OTH-057	Grab		56	173	37	241	155	24	56	11	173	5.6	6.2	3.8
84-GRS-1108	Kawashe Lake	OTH-057	Grab		168	115	55	721	298	15	26	3	98	11.1	13.8	4.2
84-GRS-1111	Kawashe Lake	OTH-057	Grab		80	105	44	281	188	17	27	3	74	ND	ND	6.3
01-RAS-198A	Dempster Lake	OTH-058	Grab	Metamesogabbro	641	111	88	300	132	8	12	ND	70	4.4	4.5	4.1
01-RAS-199A	Dempster Lake	OTH-058	Grab	Metagabbro?	214	20	43	483	ND	9	15	ND	153	1.0	ND	ND
01-RAS-200A	Dempster Lake	OTH-058	Grab	Metamesogabbro	283	94	64	712	44	10	12	ND	199	0.6	ND	1.9
01-RAS-201A	Dempster Lake	OTH-058	Grab	Metaleucogabbro	251	60	46	417	19	10	15	ND	194	ND	ND	ND
01-RAS-202A	Dempster Lake	OTH-058	Grab	Metamelagabbro	112	99	44	1111	205	14	18	ND	206	3.9	4.5	2.0
01-RAS-203A	Dempster Lake	OTH-058	Grab	Meta-andesite	71	29	28	210	31	18	144	7	264	1.6	1.4	ND
01-RAS-208A	Dempster Lake	OTH-058	Grab	Hornblende-gabbro	63	188	58	49	270	36	83	3	184	ND	ND	4.5
84-GRS-0151	Dempster Lake	OTH-058	Grab		11	57	33	23	488	24	86	ND	136	ND	ND	1.6
84-GRS-1210	Dempster Lake	OTH-058	Grab		79	76	40	605	453	15	43	10	154	15.1	12.3	2.3
84-GRS-1243	Dempster Lake	OTH-058	Grab		ND	6	28	13	21	37	186	17	163	ND	ND	ND
84-GRS-1246	Dempster Lake	OTH-058	Grab		22	61	49	18	32	24	111	16	277	ND	ND	2.3
84-GRS-1250	Dempster Lake	OTH-058	Grab		12	37	56	20	86	27	117	13	215	ND	ND	1.3
01-RAS-162A	Thierry Mine	OTH-059	Grab	Metagabbro-metapyroxenite	451	200	139	54	163	12	45	50	238	0.7	1.7	ND
01-RAS-163A	July Falls	OTH-060	Grab	Quartz-diorite	60	93	28	96	51	17	192	46	336	0.9	1.0	2.0
01-RAS-164A	July Falls	OTH-060	Grab	Quartz-diorite	ND	3	ND	14	ND	3	77	27	500	ND	ND	ND
01-RAS-165A	July Falls	OTH-060	Grab	Quartz-gabbro	43	53	15	181	10	14	77	75	596	0.6	ND	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name	Ni	Cu	Co	Cr	Se	Y	Zr	Rb	Sr	Pt	Pd	Au
				(Detection Limit-->)	2 ppm	2 ppm	12 ppm	4 ppm	7 ppb	1 ppm	3 ppm	2 ppm	2 ppm	0.5 ppb	0.9 ppb	0.9 ppb
01-RAS-166A	July Falls	OTH-060	Grab	Meso-leucogabbro	171	330	58	113	236	7	ND	22	580	17.8	9.2	8.1
01-RAS-167A	July Falls	OTH-060	Grab	Clinopyroxenite	331	153	100	587	111	16	34	6	185	ND	ND	ND
01-RAS-168A	July Falls	OTH-060	Grab	Quartz-diorite?	73	13	29	158	8	20	207	11	222	ND	ND	ND
01-RAS-169A	July Falls	OTH-060	Grab	Quartz-diorite?	68	119	22	104	59	19	203	66	282	ND	ND	ND
01-RAS-170A	July Falls	OTH-060	Grab	Andesite	2	9	ND	19	ND	4	76	32	512	ND	ND	ND
01-RAS-171A	July Falls	OTH-060	Grab	Quartz-diorite	35	73	20	69	11	21	224	55	199	ND	ND	ND
01-RAS-172A	July Falls	OTH-060	Grab	Quartz-diorite	30	55	17	58	18	27	229	26	200	ND	ND	ND
01-RAS-173A	July Falls	OTH-060	Grab	Quartz-diorite	32	22	ND	63	15	28	203	51	230	ND	ND	ND
01-RAS-174A	July Falls	OTH-060	Grab	Quartz-diorite	33	56	14	68	15	30	266	53	209	ND	ND	ND
01-RAS-175A	July Falls	OTH-060	Grab	Quartz-diorite	30	45	17	51	53	31	449	49	235	ND	ND	ND
01-GRD-013A	Lower Caribou	OTH-061	Grab	Pyroxenite	95	30	38	459	27	43	227	42	154	4.5	11.1	ND
01-GRD-014A	Lower Caribou	OTH-061	Grab	Melagab. to pg-clinopyroxenite	101	275	53	26	283	30	127	35	465	2.5	1.3	ND
01-GRD-014B	Lower Caribou	OTH-061	Grab	Clinopyroxenite	143	39	44	441	31	24	98	40	327	5.5	13.6	ND
01-GRD-015A	Lower Caribou	OTH-061	Grab	Clinopyroxenite	136	190	38	82	122	23	170	36	287	18.9	26.3	7.3
01-GRD-016A	Lower Caribou	OTH-061	Grab	Pyroxenite	191	229	44	234	172	28	143	25	336	ND	ND	10.1
01-GRD-017A	Lower Caribou	OTH-061	Grab	Quartz-monzonite	49	14	32	98	10	23	79	83	911	ND	ND	ND
01-GRD-018A	Lower Caribou	OTH-061	Grab	Syenitic gabbro	34	24	19	31	14	17	82	119	1270	ND	ND	ND
01-GRD-019A	Lower Caribou	OTH-061	Grab	Clinopyroxenite	140	8	40	623	ND	21	101	8	140	ND	ND	ND
01-GRD-019B	Lower Caribou	OTH-061	Grab	Clinopyroxenite	212	253	43	257	113	23	99	12	203	5.5	4.2	11.9
01-GRD-020A	Lower Caribou	OTH-061	Grab	Metagabbro or metapyroxenite	707	1768	76	383	1251	25	137	25	212	21.7	24.9	20.7
01-GRD-020B	Lower Caribou	OTH-061	Grab	Ol-clinopyroxenite	284	24	66	612	18	25	109	11	187	ND	ND	ND
01-GRD-021A	Lower Caribou	OTH-061	Grab	Alkali feldspar-syenite	33	27	24	30	30	15	134	121	1414	4.7	ND	ND
01-RAS-209A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	81	77	51	45	218	11	22	12	362	ND	ND	ND
01-RAS-210A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	104	50	42	161	123	12	30	14	332	ND	ND	ND
01-RAS-211A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	105	106	42	100	144	23	67	35	302	ND	ND	ND
01-RAS-212A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	385	444	63	123	942	14	37	53	291	ND	ND	ND
01-RAS-212B	Caribou Stock	OTH-062	Grab	Quartz-gabbro	82	111	19	70	166	3	54	163	187	ND	ND	ND
01-RAS-213A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	64	54	50	35	237	12	21	15	351	ND	ND	ND
01-RAS-214A	Caribou Stock	OTH-062	Grab	Quartz-hornblende-gabbro	5	24	46	7	118	34	74	24	339	ND	ND	ND
01-RAS-215A	Caribou Stock	OTH-062	Grab	Quartz-hornblende-gabbro	3	36	39	7	148	25	72	44	375	ND	ND	ND
01-RAS-216A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	69	188	62	110	536	24	32	30	166	0.8	0.9	3.0
01-RAS-217A	Caribou Stock	OTH-062	Grab	Quartz-hornblende-gabbro	5	39	53	12	205	29	49	35	314	ND	ND	ND
01-RAS-218A	Caribou Stock	OTH-062	Grab	Leucogabbro-anorthosite	4	ND	14	13	ND	17	127	36	361	ND	ND	ND
01-RAS-219A	Caribou Stock	OTH-062	Grab	Quartz-hornblende-gabbro	4	45	55	25	216	36	41	10	325	ND	ND	ND
01-RAS-220A	Caribou Stock	OTH-062	Grab	Quartz-hornblende-gabbro	52	66	66	26	278	11	23	10	282	ND	ND	ND
01-RAS-221A	Caribou Stock	OTH-062	Grab	Hornblende-gabbro	26	12	66	16	246	16	51	24	277	ND	ND	ND
01-GRD-022A	Junior Lake Area	OTH-063	Grab	Serpentinite	4390	2306	355	3978	10083	2	ND	ND	3	73.8	425.5	20.4
01-GRD-022B	Junior Lake Area	OTH-063	Grab	Amphibolite	2323	978	229	2499	4669	13	7	ND	7	5.6	35.8	1.7

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-GRD-022C	Junior Lake Area	OTH-063	Grab	Peridotite	1043	766	131	4998	3010	4	10	ND	8	30.1	115.8	4.9
01-RAS-222A	Junior Lake Area	OTH-063	Grab	Anorthositic gabbro	75	49	37	15	197	9	16	3	101	2.8	1.4	ND
01-RAS-223A	Junior Lake Area	OTH-063	Grab	Pg-clinopyroxenite	133	105	51	898	259	12	20	2	107	2.2	3.4	ND
01-RAS-224A	Junior Lake Area	OTH-063	Grab	Anorthositic gabbro	107	3	33	249	ND	6	5	ND	97	13.8	22.2	ND
01-RAS-225A	Junior Lake Area	OTH-063	Grab	Anorthositic gabbro	2810	3320	155	1595	8178	5	ND	ND	95	123.8	552.7	35.9
01-RAS-226A	Junior Lake Area	OTH-063	Grab	Anorthositic gabbro	628	741	66	988	1317	8	8	ND	98	19.9	87.4	12.7
01-RAS-227A	Junior Lake Area	OTH-063	Grab	Melagab. to anorthositic gabbro	1277	1485	112	5274	3649	3	ND	ND	89	26.8	115.4	6.8
01-RAS-228A	Junior Lake Area	OTH-063	Grab	Anorthosite to leuco-gabbro	59	25	14	77	178	2	ND	13	186	3.2	5.1	ND
01-RAS-229A	Junior Lake Area	OTH-063	Grab	Melagabbro	172	9	40	204	ND	47	380	30	205	0.9	1.5	ND
01-RAS-230A	Junior Lake Area	OTH-063	Grab	Melamesogabbro	140	67	54	630	43	14	21	8	125	3.4	3.6	1.1
01-RAS-271A	Junior Lake Area	OTH-063	Core	Mesogabbro	286	74	49	1581	147	8	10	3	125	7.2	27.1	ND
01-RAS-272A	Junior Lake Area	OTH-063	Core	Mesogabbro	379	180	40	1419	212	7	8	3	121	13.2	47.6	2.8
01-RAS-273A	Junior Lake Area	OTH-063	Core	Melagabbro	285	51	66	455	202	12	15	ND	98	16.2	51.7	ND
01-RAS-274A	Junior Lake Area	OTH-063	Core	Semi-massive sul in melagabbro	7665	516	199	193	11476	3	6	3	19	2.9	257.0	4.1
01-RAS-275A	Junior Lake Area	OTH-063	Core	Melagabbro	79	4	41	466	47	13	22	ND	123	11.4	11.4	ND
01-RAS-276A	Junior Lake Area	OTH-063	Core	Melagabbro	64	23	28	129	34	12	10	ND	121	7.3	12.4	ND
01-RAS-277A	Junior Lake Area	OTH-063	Core	Semi-massive sul magnetite	3272	1459	145	279	3018	3	25	29	47	7.6	124.8	4.6
01-RAS-278A	Junior Lake Area	OTH-063	Core	Leuco to mesogabbro	806	468	78	768	129	6	ND	21	158	27.6	83.0	2.8
01-RAS-279A	Junior Lake Area	OTH-063	Core	Mesogabbro	578	216	60	1376	276	6	8	ND	92	18.7	61.4	1.1
01-RAS-280A	Junior Lake Area	OTH-063	Core	Mesogabbro	150	291	47	330	655	19	86	28	176	ND	ND	ND
01-RAS-281A	Junior Lake Area	OTH-063	Core	Melamesogabbro	783	499	80	1085	802	6	7	ND	124	32.6	108.3	1.9
01-RAS-282A	Junior Lake Area	OTH-063	Core	Melagabbro	155	211	57	398	328	20	41	ND	80	5.5	3.4	9.5
01-RAS-283A	Junior Lake Area	OTH-063	Core	Megacrystic gabbro	1213	498	80	1020	1449	6	6	ND	94	49.1	130.0	3.2
01-RAS-284A	Junior Lake Area	OTH-063	Core	Melagabbro	89	99	52	179	197	35	89	ND	85	1.0	1.1	3.9
01-RAS-285A	Junior Lake Area	OTH-063	Core	Mesogabbro	107	77	44	211	275	17	38	3	90	0.9	2.2	ND
01-RAS-286A	Junior Lake Area	OTH-063	Core	Melagabbro	34	7	44	54	22	31	64	ND	108	ND	ND	ND
01-RAS-287A	Junior Lake Area	OTH-063	Core	Magnetite gabbro	8	24	39	19	34	58	155	2	82	ND	ND	ND
01-RAS-288A	Junior Lake Area	OTH-063	Core	Melagabbro	118	137	53	313	248	19	31	29	359	5.3	4.0	ND
01-RAS-289A	Junior Lake Area	OTH-063	Core	Melamesogabbro	65	55	36	396	139	20	40	20	166	1.3	ND	ND
01-RAS-290A	Junior Lake Area	OTH-063	Core	Melagabbro	80	144	54	295	778	20	38	12	200	5.5	2.5	ND
89-BRB-0313	Junior Lake Area	OTH-063	Grab	Pyroxenite	214	35	61	1863	11	8	9	ND	16	2.8	3.3	ND
89-BRB-0334	Junior Lake Area	OTH-063	Grab	Peridotite	1727	9	132	35404	57	4	6	ND	3	8.1	7.6	1.1
89-BRB-0067	Toronto Lake	OTH-064	Grab	Gabbro	76	51	30	239	89	15	89	14	166	1.1	ND	ND
89-BRB-0228	Toronto Lake	OTH-064	Grab	Gabbro	39	95	64	113	280	29	115	8	227	ND	ND	ND
89-BRB-0234	Toronto Lake	OTH-064	Grab	Gabbro	130	116	54	313	240	26	60	ND	144	1.1	ND	ND
89-BRB-0275	Toronto Lake	OTH-064	Grab	Gabbro	132	56	47	776	20	16	30	6	92	11.4	4.3	ND
89-BRB-0288	Toronto Lake	OTH-064	Grab	Peridotite	2011	6	90	3781	75	1	ND	ND	ND	0.9	ND	ND
89-BRB-0300	Toronto Lake	OTH-064	Grab	Gabbro	59	106	41	192	316	24	53	5	113	ND	ND	1.1

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni	Cu	Co	Cr	Se	Y	Zr	Rb	Sr	Pt	Pd	Au
					2 ppm	2 ppm	12 ppm	4 ppm	7 ppb	1 ppm	3 ppm	2 ppm	2 ppm	0.5 ppb	0.9 ppb	0.9 ppb
89-BRB-0344	Toronto Lake	OTH-064	Grab	Peridotite	1955	4	125	5604	67	4	7	ND	ND	4.5	5.6	1.1
89-BRB-0360	Toronto Lake	OTH-064	Grab	Gabbro	79	179	48	353	555	27	56	ND	159	2.3	0.9	1.5
89-BRB-0364	Toronto Lake	OTH-064	Grab	Diabase	53	ND	19	570	ND	6	ND	25	188	13.2	13.5	ND
89-BRB-0367	Toronto Lake	OTH-064	Grab	Gabbro	110	118	45	414	130	23	52	3	119	1.9	ND	3.2
89-BRB-0375	Toronto Lake	OTH-064	Grab	Gabbro	152	125	58	381	352	22	48	6	105	0.8	ND	ND
99-GRS-0017A	Marshall Lake	OTH-065	Grab	Mafic intrusive	*63*	*47*	*31*	*17*	*NA*	*20*	*134*	*23*	*759*	ND	ND	ND
99-GRS-0021A	Marshall Lake	OTH-065	Grab	Ultramafic intrusive	*79*	*116*	*76*	*15*	*NA*	*17*	*47*	*3*	*93*	7.8	8.1	ND
99-GRS-0023A	Marshall Lake	OTH-065	Grab	Mafic intrusive	*272*	*62*	*50*	*464*	*NA*	*15*	*90*	*14*	*222*	1.0	ND	ND
97-GRS-0034A	O'Sullivan Lake	OTH-066	Grab	Felsic Tuff	*NA*	*8*	*NA*	*7*	*NA*	*13*	*140*	*24*	*336*	ND	ND	ND
97-GRS-0073A	O'Sullivan Lake	OTH-066	Grab	Felsic intrusive	*10*	*39*	*NA*	*12*	*NA*	*9*	*161*	*45*	*263*	ND	ND	ND
97-GRS-0115A	O'Sullivan Lake	OTH-066	Grab	Ultramafic intrusive	*989*	*NA*	*112*	*500*	*NA*	*6*	*12*	*2*	*5*	1.4	ND	ND
97-GRS-0228A	O'Sullivan Lake	OTH-066	Grab	Gabbro	*135*	*97*	*47*	*334*	*NA*	*23*	*55*	*3*	*108*	5.9	4.1	ND
97-GRS-0250A	O'Sullivan Lake	OTH-066	Grab	Gabbro dike	*86*	*124*	*44*	*210*	*NA*	*32*	*85*	*12*	*99*	1.3	ND	ND
98-GRS-0131A	Gzowski	OTH-067	Grab	Gabbro	*39*	*68*	*50*	*6*	*NA*	*44*	*130*	*2*	*110*	ND	ND	ND
98-GRS-0168A	Gzowski	OTH-067	Grab	Ultramafic intrusive	*439*	*108*	*86*	*492*	*NA*	*11*	*42*	*6*	*19*	8.2	14.5	ND
98-GRS-0171A	Gzowski	OTH-067	Grab	Gabbro	*130*	*93*	*53*	*406*	*NA*	*16*	*50*	*16*	*166*	11.3	14.1	ND
98-GRS-0172A	Gzowski	OTH-067	Grab	Melanogabbro	*39*	*29*	*24*	*28*	*NA*	*9*	*161*	*24*	*90*	2.2	1.5	ND
98-GRS-0187A	Gzowski	OTH-067	Grab	Felsic metavolcanic	*320*	*54*	*53*	*500*	*NA*	*15*	*60*	*12*	*549*	ND	ND	4.8
98-GRS-2096A	Gzowski	OTH-067	Grab	Basalt	*63*	*23*	*14*	*353*	*NA*	*14*	*166*	*65*	*194*	0.5	1.0	ND
98-GRS-2097A	Gzowski	OTH-067	Grab	Basalt	*82*	*61*	*34*	*142*	*NA*	*17*	*93*	*55*	*130*	3.3	3.6	2.8
01-GRD-023A	Jackson/Ledingham	OTH-068	Grab	Metapyroxenite	304	191	69	2453	440	11	17	3	45	33.5	145.9	1.5
01-GRD-023B	Jackson/Ledingham	OTH-068	Grab	Metamelagabbro/pyroxenite	83	89	52	97	76	10	14	19	157	1.6	ND	ND
01-GRD-024A	Jackson/Ledingham	OTH-068	Grab	Metamelagabbro	74	29	46	179	30	20	47	4	120	6.4	8.2	ND
01-GRD-025A	Jackson/Ledingham	OTH-068	Grab	Gabbronorite	82	127	60	250	276	23	77	8	194	ND	ND	ND
95-GRS-0308A	Jackson/Ledingham	OTH-068	Grab	Gabbro	41	125	44	60	18	22	45	3	108	ND	ND	ND
95-GRS-0309A	Jackson/Ledingham	OTH-068	Grab	Rhyolitic tuff	18	59	13	35	221	10	218	31	90	ND	2.9	1.3
95-GRS-1319	Jackson/Ledingham	OTH-068	Grab	Gabbro	63	49	40	94	35	10	17	2	96	ND	ND	ND
95-GRS-2070A	Jackson/Ledingham	OTH-068	Grab		93	86	46	163	132	24	106	2	263	ND	ND	ND
95-GRS-0263A	Crooked Green	OTH-069	Grab	Gabbro	*99*	*NA*	*28*	*209*	*NA*	*18*	*192*	*13*	*285*	0.6	ND	ND
95-GRS-0266A	Crooked Green	OTH-069	Grab	Gabbro	*69*	*44*	*21*	*129*	*NA*	*15*	*136*	*13*	*260*	ND	ND	ND
01-CAM-149A	Jacobus	OTH-070	Grab	Quartz-gabbro	92	229	40	136	238	10	52	19	287	ND	ND	1.3
01-CAM-150A	Jacobus	OTH-070	Grab	Quartz-gabbro to diorite	106	420	46	171	269	7	35	17	315	ND	ND	1.1
01-CAM-151A	Jacobus	OTH-070	Grab	Tonalite or quartz-diorite	170	56	47	247	78	10	46	16	313	0.7	ND	ND
01-CAM-152A	Jacobus	OTH-070	Grab	Metadiorite	41	61	17	17	71	18	178	16	243	ND	ND	ND
01-CAM-152B	Jacobus	OTH-070	Grab	Melagabbro	330	95	31	465	32	13	39	8	436	6.0	6.2	ND
01-CAM-153A	Jacobus	OTH-070	Grab	Quartz-diorite to tonalite	782	754	77	304	1171	9	39	30	217	3.8	ND	1.9
01-CAM-154A	Jacobus	OTH-070	Grab	Quartz-diorite to tonalite	3151	5350	151	316	825	10	46	23	180	11.8	3.4	39.7
01-CAM-155A	Jacobus	OTH-070	Grab	Melagabbro	4424	6022	172	302	1189	11	40	17	157	19.3	4.2	50.5

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-CAM-156A	Jacobus	OTH-070	Grab	Quartz-diorite to tonalite	249	79	47	327	182	10	43	26	178	0.7	ND	1.3
01-CAM-157A	Jacobus	OTH-070	Grab	Felsic to int. metavolcanic	29	184	21	54	80	11	128	12	254	ND	ND	8.1
01-CAM-158A	Nipissing/Karalash	OTH-071	Grab	Gabbronorite	51	130	48	47	237	34	59	17	143	ND	ND	ND
01-CAM-159A	Nipissing/Karalash	OTH-071	Grab	Gabbro or gabbronorite	88	139	48	87	230	16	42	43	151	1.0	ND	1.2
01-CAM-160A	Nipissing/Karalash	OTH-071	Grab	Gabbro or gabbronorite	115	52	38	685	85	11	22	39	141	31.8	26.6	2.2
01-CAM-161A	Nipissing/Karalash	OTH-071	Grab	Gabbronorite	139	170	43	555	158	11	20	22	143	24.0	20.0	8.0
01-CAM-162A	Nipissing/Karalash	OTH-071	Grab	Hornblende-gabbro	99	105	50	282	251	17	40	50	141	10.3	10.4	1.5
01-CAM-163A	Nipissing/Bruce	OTH-072	Grab	Gabbro or gabbronorite	132	149	53	238	250	13	37	26	162	14.7	8.2	5.7
01-CAM-164A	Nipissing/Bruce	OTH-072	Grab	Gabbronorite or cpx-norite	154	118	53	407	185	16	43	13	128	9.8	10.6	1.6
01-CAM-165A	Nipissing/Bruce	OTH-072	Grab	Gabbronorite	54	100	57	141	404	35	120	70	168	1.0	ND	ND
01-CAM-166A	Nipissing/Bruce	OTH-072	Grab	Gabbronorite?	144	132	49	265	208	13	26	22	187	35.8	27.4	8.4
01-CAM-167A	Nipissing/Bruce	OTH-072	Grab	Gabbro	153	106	75	169	273	32	153	16	237	ND	ND	ND
01-CAM-168A	Nipissing/Bruce	OTH-072	Grab	Gabbronorite	116	152	55	129	209	19	61	23	140	12.1	13.1	2.4
01-CAM-169A	Nipissing/Bruce	OTH-072	Grab	Gabbronorite	40	54	47	98	213	28	135	13	178	ND	ND	ND
01-CAM-170A	Nipissing/Bruce	OTH-072	Grab	Gabbro or gabbronorite	41	67	45	86	208	28	134	21	198	ND	ND	ND
01-CAM-170B	Nipissing/Bruce	OTH-072	Grab	Gabbronorite	106	94	45	209	111	14	54	21	203	7.8	13.2	ND
01-CAM-171A	Nipissing/Rose	OTH-073	Grab	Gabbro	73	129	51	40	130	20	69	29	204	8.2	5.3	1.5
01-CAM-172A	Nipissing/Rose	OTH-073	Grab	Monzodiorite to diorite	49	316	68	26	301	27	109	38	185	ND	ND	1.6
01-CAM-173A	Nipissing/Rose	OTH-073	Grab	Gabbro	30	135	51	27	292	31	126	25	197	ND	ND	1.4
01-CAM-174A	Nipissing/Rose	OTH-073	Grab	Quartz-gabbro	85	136	49	98	244	17	39	37	133	ND	ND	ND
01-CAM-175A	Nipissing/Rose	OTH-073	Grab	Gabbronorite	113	135	45	248	245	15	33	19	147	2.8	1.7	4.2
01-CAM-176A	Nipissing/Rose	OTH-073	Grab	Gabbro	22	125	54	20	264	36	167	44	206	ND	ND	ND
01-CAM-177A	Nipissing/Rose	OTH-073	Grab	Gabbro	82	126	49	112	318	20	54	24	133	6.1	3.2	2.1
01-CAM-178A	Nipissing/Rose	OTH-073	Grab	Gabbro	68	217	51	37	166	23	99	44	210	12.6	22.8	15.9
01-CAM-179A	Nipissing/Rose	OTH-073	Grab	Gabbronorite	125	78	42	596	152	14	31	11	122	9.4	10.3	1.5
01-CAM-181A	Nipissing/Rose	OTH-073	Grab	Hornblende-gabbro	55	41	55	110	228	25	124	36	190	ND	ND	ND
01-CAM-182A	Nipissing/Rose	OTH-073	Grab	Hornblende-gabbro	45	224	58	88	202	27	133	63	165	1.0	ND	ND
01-CAM-183A	Nipissing/Rose	OTH-073	Grab	Gabbronorite/opx-gabbro	107	113	43	352	189	15	34	17	138	13.1	12.5	3.3
01-CAM-184A	Nipissing/Rose	OTH-073	Grab	Quartz-gabbro	56	181	54	43	233	23	91	49	182	14.0	8.6	3.0
01-CAM-185A	Nipissing/Rose	OTH-073	Grab	Hornblende-gabbro	61	288	53	61	261	22	89	50	247	2.2	ND	4.1
01-CAM-186A	Nipissing/Rose	OTH-073	Grab	Quartz-gabbro to gabbronorite	82	124	51	87	249	19	52	37	147	11.8	13.4	2.6
01-CAM-187A	Nipissing/Rose	OTH-073	Grab	Quartz-gabbro to gabbronorite	49	192	52	28	224	28	122	71	211	11.7	6.0	2.4
01-CAM-188A	Nipissing/Rose	OTH-073	Grab	Quartz-monzonite	49	202	54	28	212	28	118	68	168	13.6	5.3	4.8
01-CAM-189A	Nipissing/Rose	OTH-073	Grab	Monzodiorite to monzogabbro	30	6	33	18	183	35	148	57	95	ND	ND	ND
01-CAM-180A	Otter Township	OTH-074	Grab	Monzonite	39	112	28	92	23	30	136	39	100	7.5	6.6	2.3
01-RAS-253A	Sun Rise Lake	OTH-075	Grab	Mesogabbro	43	200	59	45	378	46	185	34	183	ND	ND	ND
01-RAS-254A	Sun Rise Lake	OTH-075	Grab	Metabasalt or mesogabbro	65	28	40	250	90	18	38	13	114	12.3	18.3	ND
01-RAS-255A	Sun Rise Lake	OTH-075	Grab	Massive pyrite	104	87	84	204	824	12	29	7	59	8.2	9.8	38.1

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-RAS-256A	Sun Rise Lake	OTH-075	Grab	Leucogabbro	14	14	17	22	68	27	199	68	63	ND	ND	ND
01-RAS-257A	Sun Rise Lake	OTH-075	Grab	Melagabbro	85	31	56	240	32	15	31	16	174	17.9	17.9	ND
01-RAS-258A	Sun Rise Lake	OTH-075	Grab	Mesogabbro	59	24	53	47	74	36	88	33	109	1.4	ND	ND
01-RAS-259A	Sun Rise Lake	OTH-075	Grab	Mesogabbro	57	181	60	93	277	30	101	28	170	0.9	ND	1.0
01-RAS-260A	Pelletier	OTH-076	Grab	Metamesogabbro	86	30	52	436	69	33	87	68	110	7.7	9.7	ND
01-RAS-261A	Pelletier	OTH-076	Grab	Metaleucogabbro	49	30	30	267	42	20	84	8	148	2.5	5.0	ND
01-RAS-262A	Pelletier	OTH-076	Grab	Metamesogabbro	54	39	29	331	36	15	55	64	339	2.3	1.8	ND
01-RAS-263A	Pelletier	OTH-076	Grab	Metagabbro	224	5	47	1023	ND	14	40	25	269	2.3	2.3	ND
01-RAS-264A	Ab. Canyon-Pinard	OTH-077	Grab	Mesogabbro	69	161	64	63	439	57	170	ND	155	0.7	ND	ND
01-RAS-265A	Ab. Canyon-Pinard	OTH-077	Grab	Mesogabbro	45	38	57	258	135	15	ND	2	633	ND	ND	ND
01-RAS-266A	Ab. Canyon-Pinard	OTH-077	Grab	Olivine-gabbro	33	62	36	46	146	5	ND	3	1276	ND	ND	ND
01-RAS-267A	Ab. Canyon-Pinard	OTH-077	Grab	Olivine-gabbro	108	116	72	159	251	11	14	2	688	0.7	ND	ND
01-RAS-268A	Ab. Canyon-Pinard	OTH-077	Grab	Olivine-gabbro	67	96	104	ND	566	12	ND	5	1091	ND	ND	ND
01-RAS-269A	Ab. Canyon-Pinard	OTH-077	Grab	Olivine-gabbro	74	175	77	7	278	11	ND	4	931	ND	ND	ND
01-RAS-270A	Ab. Canyon-Pinard	OTH-077	Grab	Olivine-gabbro	11	73	55	70	70	8	ND	4	891	ND	ND	ND
01-MGH-036A	Montcalm	OTH-078	Core	Mesogabbro	226	37	24	765	53	5	3	5	346	ND	ND	ND
01-MGH-036C	Montcalm	OTH-078	Core	Norite	611	208	112	4012	305	4	7	ND	122	7.8	5.8	ND
01-MGH-036D	Montcalm	OTH-078	Core	Mesogabbro	240	30	43	919	53	4	ND	21	355	ND	ND	ND
01-MGH-037A	Montcalm	OTH-078	Core	Mesogabbro	292	13	40	1132	20	4	9	54	269	ND	ND	ND
01-MGH-037B	Montcalm	OTH-078	Core	Mesogabbro	300	35	48	1102	53	5	9	15	247	ND	ND	ND
01-MGH-037C	Montcalm	OTH-078	Core	Mesogabbro	266	2	39	1026	ND	3	ND	36	312	ND	ND	ND
01-MGH-037D	Montcalm	OTH-078	Core	Mesogabbro	254	21	36	1046	41	5	9	22	279	ND	ND	ND
01-MGH-037E	Montcalm	OTH-078	Core	Mesogabbro	229	51	35	823	103	4	7	11	346	ND	ND	2.6
01-MGH-037F	Montcalm	OTH-078	Core	Mesogabbro	348	30	59	976	85	4	6	4	187	ND	ND	ND
01-MGH-038A	Montcalm	OTH-078	Core	Mesogabbro	275	28	43	897	79	3	3	6	254	1.1	2.2	1.2
01-MGH-038B	Montcalm	OTH-078	Core	Mesogabbro	244	24	44	892	47	2	ND	29	309	ND	ND	ND
01-MGH-038C	Montcalm	OTH-078	Core	Mesogabbro	233	32	36	869	85	4	ND	5	317	ND	ND	ND
01-MGH-038D	Montcalm	OTH-078	Core	Mesogabbro	1326	559	68	393	1416	4	ND	6	421	ND	ND	8.3
01-MGH-038E	Montcalm	OTH-078	Core	Melamesogabbro	343	54	39	808	91	2	ND	8	274	ND	ND	ND
01-MGH-039A	Montcalm	OTH-078	Core	Mesogabbro-leucogabbro	256	26	47	886	42	4	5	2	224	ND	ND	ND
01-MGH-039B	Montcalm	OTH-078	Core	Melagabbro	336	39	58	1009	80	4	7	5	174	ND	ND	ND
01-MGH-040A	Montcalm	OTH-078	Core	Leuco to mesogabbro	232	31	38	833	65	3	ND	4	325	ND	ND	ND
01-MGH-040B	Montcalm	OTH-078	Core	Peridotite	5182	2727	223	199	6301	1	ND	ND	11	4.3	5.0	35.8
01-MGH-040C	Montcalm	OTH-078	Core	Melagabbro	457	31	55	1006	65	20	105	2	657	1.1	ND	ND
01-MGH-040D	Montcalm	OTH-078	Core	Mesogabbro	281	228	48	580	140	2	ND	41	378	ND	ND	16.0
01-MGH-041A	Montcalm	OTH-078	Core	Meso-leucogabbro	220	26	33	813	56	3	ND	33	341	ND	ND	ND
01-MGH-041B	Montcalm	OTH-078	Core	Mesogabbro-leucogabbro	60	160	28	92	245	27	119	24	1617	ND	ND	ND
01-MGH-041C	Montcalm	OTH-078	Core	Semi-massive sul	26303	15506	552	366	13052	17	8	5	42	26.7	12.0	19.7

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-MGH-041D	Montcalm	OTH-078	Core	Mesogabbro	203	60	44	254	138	4	ND	26	290	ND	ND	ND
01-MGH-041E	Montcalm	OTH-078	Core	Leucogabbro	6383	2509	224	50	8696	2	ND	ND	28	5.0	3.7	15.4
01-MGH-041F	Montcalm	OTH-078	Core	Mesogabbro	356	70	53	699	110	3	ND	28	164	ND	ND	ND
01-MGH-042A	Montcalm	OTH-078	Core	Leuco to mesogabbro	211	21	30	750	67	3	ND	14	401	ND	ND	2.0
01-MGH-042B	Montcalm	OTH-078	Core	Melagabbro	457	36	38	1020	219	21	127	3	209	1.0	ND	ND
01-MGH-042C	Montcalm	OTH-078	Core	Mesogabbro	262	15	39	995	101	5	18	6	147	ND	ND	ND
01-MGH-042D	Montcalm	OTH-078	Core	Net-textured sul in websterite	10588	3812	306	1069	13880	7	7	ND	23	1.8	4.3	31.6
01-MGH-042E	Montcalm	OTH-078	Core	Leucogabbro	142	98	43	242	236	3	ND	32	517	ND	ND	ND
01-CMV-147A	Loveland	OTH-079	Core	Cannot be identified	140	5	37	479	ND	16	61	24	110	ND	ND	ND
01-CMV-147B	Loveland	OTH-079	Core	Quartz-gabbro	67	5	32	127	14	21	120	13	155	0.5	ND	ND
01-CMV-147C	Loveland	OTH-079	Core	Mesogabbro	384	24	45	141	235	11	36	18	181	7.2	21.8	ND
01-CMV-147D	Loveland	OTH-079	Core	Mesogabbro	7838	3580	335	174	18165	11	15	4	157	455.4	1224.3	275.3
01-CMV-147E	Loveland	OTH-079	Core	Quartz-gabbro	31	69	57	37	598	34	127	19	133	0.9	9.7	1.8
01-CMV-148A	Loveland	OTH-079	Core	Quartz-gabbro	97	20	37	226	40	22	112	29	141	ND	1.5	ND
01-CMV-148B	Loveland	OTH-079	Core	Mesogabbro	92	194	59	246	308	11	29	19	145	ND	ND	ND
01-CMV-148C	Loveland	OTH-079	Core	Quartz-gabbro	167	33	46	471	33	11	52	19	130	1.3	ND	ND
01-CMV-148D	Loveland	OTH-079	Core	Mesogabbro	1382	4269	132	114	4414	7	21	53	147	44.6	234.3	27.7
01-CMV-149A	Loveland	OTH-079	Core	Mesogabbro	1426	13393	148	667	3392	13	21	9	77	18.1	214.7	77.9
01-CMV-150A	Loveland	OTH-079	Core	Quartz-gabbro	189	31	48	512	25	12	58	12	122	1.3	1.6	ND
01-CMV-150B	Loveland	OTH-079	Core	Mesogabbro	2803	12256	159	350	7215	11	17	11	103	59.1	330.9	13.5
01-CMV-150C	Loveland	OTH-079	Core	Gabbro	300	100	81	780	248	20	34	25	75	2.4	5.5	ND
01-CAM-018B	Kamiskotia	OTH-080	Grab	Peridotite-lherzolite	1682	30	126	3594	146	5	8	3	9	15.5	18.5	ND
01-CAM-019A	Kamiskotia	OTH-080	Grab	Gabbro	161	102	53	498	14	4	ND	ND	111	ND	ND	ND
01-CAM-020A	Kamiskotia	OTH-080	Grab	Serpentinite	984	97	140	289	118	2	ND	ND	7	6.1	7.7	4.5
01-CAM-021A	Kamiskotia	OTH-080	Grab	Chlorite-actinolite schist	1038	96	121	283	16	3	ND	ND	4	13.8	10.3	ND
01-CAM-022A	Kamiskotia	OTH-080	Grab	Leucogabbro	1609	758	144	321	2559	4	ND	ND	12	42.5	68.0	11.3
01-CAM-023A	Kamiskotia	OTH-080	Grab	Melagabbro	67	260	52	101	553	42	158	26	130	0.8	ND	ND
01-CAM-024A	Kamiskotia	OTH-080	Grab	Gabbro	116	179	48	643	94	5	10	5	157	7.2	6.6	ND
01-CAM-025A	Kamiskotia	OTH-080	Grab	Gabbronorite to opx-gabbro	71	219	65	268	430	33	117	15	131	6.5	2.2	ND
01-CAM-026A	Kamiskotia	OTH-080	Grab	Gabbro	66	240	46	210	365	29	102	9	139	12.7	9.8	2.0
01-CAM-027A	Kamiskotia	OTH-080	Grab	Gabbro	76	230	58	259	315	25	82	12	136	12.1	11.9	2.8
01-CAM-028A	Kamiskotia	OTH-080	Grab	Metamelagabbro	136	123	41	460	135	6	7	3	103	1.0	ND	ND
01-CAM-029A	Kamiskotia	OTH-080	Grab	Metamelagabbro	245	65	64	375	138	22	101	28	86	1.1	ND	ND
01-CAM-030A	Kamiskotia	OTH-080	Grab	Gabbro to gabbronorite	63	190	54	162	438	30	122	53	157	3.5	2.1	ND
01-RAS-023A	Kamiskotia	OTH-080	Grab	Mesogabbro	64	183	55	105	465	37	140	17	135	1.0	ND	ND
01-RAS-024A	Kamiskotia	OTH-080	Grab	Metamesogabbro	54	180	52	76	506	43	144	18	145	1.1	ND	1.0
01-RAS-025A	Kamiskotia	OTH-080	Grab	Hornblende-gabbro	59	46	30	145	23	14	27	4	175	ND	ND	ND
01-RAS-026A	Kamiskotia	OTH-080	Grab	Gabbro	146	77	83	232	199	29	126	16	90	ND	ND	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9ppb	Au 0.9 ppb
01-RAS-027A	Kamiskotia	OTH-080	Grab	Mesogabbro	71	58	50	183	186	29	75	3	102	ND	ND	ND
01-RAS-028A	Kamiskotia	OTH-080	Grab	Mesogabbro	174	20	54	171	107	7	33	32	251	ND	ND	ND
01-RAS-029A	Kamiskotia	OTH-080	Grab	Mesogabbro	70	36	51	175	ND	33	98	ND	109	ND	ND	ND
01-RAS-030A	Kamiskotia	OTH-080	Grab	Leucogabbro	39	46	45	70	366	24	43	4	126	ND	ND	ND
01-RAS-031A	Kamiskotia	OTH-080	Grab	Mesogabbro	77	114	74	90	435	12	26	ND	108	ND	ND	ND
01-RAS-032A	Kamiskotia	OTH-080	Grab	Olivine-gabbro	59	67	57	51	459	18	9	ND	114	ND	ND	ND
01-RAS-033A	Kamiskotia	OTH-080	Grab	Mesogabbro	156	17	54	1115	128	7	11	ND	100	19.9	.6	ND
01-RAS-034A	Kamiskotia	OTH-080	Grab	Leucogabbro	115	46	40	1010	111	8	13	ND	105	22.9	.7	1.9
01-RAS-035A	Kamiskotia	OTH-080	Grab	Mesogabbro	177	78	40	977	130	6	14	2	118	5.3	.1	ND
01-RAS-036A	Kamiskotia	OTH-080	Grab	Hornblende-gabbro	40	80	45	61	455	15	25	4	125	ND	ND	ND
01-CAM-031A	Cunningham	OTH-081	Grab	Serpentinite	1099	20	170	3387	70	7	14	3	14	2.7	1.6	ND
01-CAM-032A	Cunningham	OTH-081	Grab	Dunite to lherzolite	1299	26	169	4122	33	6	11	ND	8	85.2	7.0	ND
01-CAM-033A	Cunningham	OTH-081	Grab	Serpentinite	1349	80	163	4133	46	6	13	4	5	2.5	.5	ND
01-CAM-034A	Cunningham	OTH-081	Grab	Gabbro	84	265	74	155	514	38	149	75	200	1.1	ND	ND
01-CAM-035A	Cunningham	OTH-081	Grab	Gabbro to hornblende-gabbro	82	46	39	414	95	29	97	95	210	6.4	.9	ND
01-CAM-036A	Cunningham	OTH-081	Grab	Gabbro	69	69	40	265	150	17	44	29	136	ND	0	ND
01-CAM-037A	Cunningham	OTH-081	Grab	Gabbro	73	33	35	780	109	9	31	156	155	ND	ND	ND
01-CAM-038A	Cunningham	OTH-081	Grab	Serpentinite	1497	46	146	3712	48	6	12	ND	4	1.6	ND	ND
01-RAS-037A	Cunningham	OTH-081	Grab	Quartz-gabbro to quartz diorite	44	76	43	37	337	32	111	23	160	6.5	.8	ND
01-RAS-038A	Cunningham	OTH-081	Grab	Mesogabbro-leucogabbro	76	40	33	710	198	12	35	63	163	1.5	.2	ND
01-RAS-039A	Cunningham	OTH-081	Grab	Mesogabbro	125	115	53	360	370	21	59	27	171	1.5	ND	ND
01-RAS-040A	Cunningham	OTH-081	Grab	Dunite	1234	9	148	3402	60	8	20	3	4	5.3	.2	ND
01-RAS-041A	Cunningham	OTH-081	Grab	Melagabbro	79	136	52	244	230	22	62	32	145	0.8	ND	ND
01-RAS-042A	Cunningham	OTH-081	Grab	Mesogabbro	78	130	50	143	70	18	49	14	117	ND	ND	ND
01-RAS-043A	Cunningham	OTH-081	Grab	Melamesogabbro	82	119	51	170	244	19	56	15	117	ND	ND	ND
01-RAS-044A	Cunningham	OTH-081	Grab	Mesogabbro	82	127	52	184	509	18	52	5	103	0.7	ND	ND
01-RAS-045A	Cunningham	OTH-081	Grab	Wehrlite-orthocumulate	133	120	66	211	391	18	36	32	113	11.5	4.9	ND
01-RAS-046A	Cunningham	OTH-081	Grab	Quartz-gabbro	1177	23	161	3556	74	10	23	4	15	2.0	.6	ND
01-RAS-047A	Cunningham	OTH-081	Grab	Wehrlite-orthocumulate	1149	46	144	3343	77	10	30	3	48	2.4	1.4	ND
01-RAS-048A	Cunningham	OTH-081	Grab	Leucogabbro	95	15	42	900	22	11	30	24	115	2.0	.3	ND
01-RAS-049A	Cunningham	OTH-081	Grab	Leucogabbro	56	68	33	196	222	25	74	39	146	5.1	.3	ND
01-RAS-050A	Garnett	OTH-081	Grab	Mesogabbro	75	145	54	127	197	18	44	15	118	ND	ND	ND
01-RAS-051A	Garnett	OTH-081	Grab	Mesogabbro	89	1345	62	140	1577	21	52	12	90	ND	ND	1.4
01-RAS-052A	Garnett	OTH-081	Grab	Coarse-grained basalt	124	880	48	586	568	18	44	8	87	ND	ND	ND
01-CMV-048A	Sothman	OTH-082	Grab	Dunite	6558	757	257	1901	882	4	5	ND	4	27.4	3.6	9.9
01-CMV-048B	Sothman	OTH-082	Grab	Dunite	26554	2091	459	3161	3272	5	8	3	9	182.0	47.9	48.5
01-CMV-048C	Sothman	OTH-082	Grab	Lherzolite	1807	20	126	3928	114	5	5	ND	2	5.4	.7	2.8
01-CMV-048D	Sothman	OTH-082	Grab	Lherzolite	1810	7	116	3231	48	6	8	ND	7	2.0	.9	2.1

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd [illegible] ppb	As 0.9 ppb
01-CMV-048E	Sothman	OTH-082	Grab	Porphyry dike	310	6	14	47	64	23	80	ND	11	1.5	5	ND
01-CMV-048F	Sothman	OTH-082	Grab	Andesite	56	ND	20	72	ND	16	143	17	335	ND	ND	ND
01-MGH-006A	Peterlong Lake	OTH-083	Grab	Gabbro to quartz-gabbro	59	56	42	284	180	22	44	2	106	ND	ND	ND
01-MGH-007A	Peterlong Lake	OTH-083	Grab	Quartz-gabbro	ND	ND	62	16	ND	41	94	3	104	ND	ND	ND
01-MGH-008A	Peterlong Lake	OTH-083	Grab	Quartz-gabbro	54	125	55	218	164	22	44	ND	131	ND	ND	ND
01-MGH-009A	Peterlong Lake	OTH-083	Grab	Quartz-gabbro	54	166	52	131	138	18	34	ND	145	ND	ND	ND
01-MGH-010A	Peterlong Lake	OTH-083	Grab	Quartz-gabbro	29	54	58	33	32	33	66	ND	135	ND	ND	ND
01-MGH-011A	Peterlong Lake	OTH-083	Grab	Mesogabbro	265	27	59	194	134	15	22	ND	92	ND	ND	ND
01-MGH-012A	Peterlong Lake	OTH-083	Grab	Quartz-gabbro	17	89	49	27	394	44	93	ND	429	ND	ND	2.9
01-MGH-013A	Peterlong Lake	OTH-083	Grab	Mesogabbro	77	261	56	228	195	23	47	ND	127	0.7	8	2.2
01-MGH-014A	Peterlong Lake	OTH-083	Grab	Leucogabbro	58	31	57	173	82	12	9	6	301	ND	ND	ND
01-MGH-015A	Peterlong Lake	OTH-083	Grab	Lherzolite-websterite	115	143	48	657	173	17	27	2	107	ND	ND	1.1
01-MGH-016A	Peterlong Lake	OTH-083	Grab	Mesogabbro	484	30	101	175	9	14	27	2	140	ND	ND	ND
01-MGH-017A	Peterlong Lake	OTH-083	Grab	Mesogabbro	534	10	111	177	ND	13	27	ND	47	ND	ND	ND
01-MGH-018A	Peterlong Lake	OTH-083	Grab	Mesogabbro	362	70	79	157	29	13	27	2	106	ND	4	ND
01-MGH-019A	Peterlong Lake	OTH-083	Grab	Quartz-gabbro	62	96	58	87	230	34	72	ND	111	0.8	ND	ND
01-MGH-029A	Dundonald	OTH-084	Grab	Mesogabbro-leucogabbro	23	17	39	19	389	41	201	4	52	ND	ND	ND
01-MGH-030A	Dundonald	OTH-084	Grab	Leuco to mesogabbro	ND	26	32	7	58	45	160	8	243	ND	ND	ND
01-MGH-031A	Dundonald	OTH-084	Grab	Dunite	1771	10	196	6916	45	5	11	3	3	4.0	3	ND
01-MGH-032A	Dundonald	OTH-084	Grab	Clinopyroxenite	379	93	80	2077	12	11	20	ND	11	1.1	ND	ND
01-MGH-033A	Dundonald	OTH-084	Grab	Melanogabbro	333	276	76	198	255	14	26	ND	34	0.5	ND	ND
01-MGH-033B	Dundonald	OTH-084	Grab	Clinopyroxenite	228	748	93	36	232	15	34	ND	25	ND	ND	ND
01-MGH-033C	Dundonald	OTH-084	Grab	Mesogabbro	4	20	85	13	26	20	34	10	414	ND	ND	ND
01-MGH-034A	Dundonald	OTH-084	Grab	Clinopyroxenite-melagabbro	373	92	76	1479	109	12	18	ND	21	7.6	17	ND
01-MGH-034B	Dundonald	OTH-084	Grab	Clinopyroxenite	365	993	79	202	398	15	28	ND	50	1.2	ND	3.9
01-MGH-034C	Dundonald	OTH-084	Grab	Clinopyroxenite	281	170	78	304	108	15	26	2	34	649.7	12.6	3.6
01-MGH-034D	Dundonald	OTH-084	Grab	Clinopyroxenite-melagabbro	251	748	74	53	400	17	29	ND	57	592.3	13.1	3.1
01-MGH-034E	Dundonald	OTH-084	Grab	Clinopyroxenite	273	589	82	172	438	12	17	ND	18	3.1	ND	1.7
01-MGH-035A	Dundonald	OTH-084	Grab	Mesogabbro	3	431	42	12	251	51	189	6	210	ND	ND	ND
01-MGH-035B	Dundonald	OTH-084	Grab	Peridotite	1870	87	180	4899	293	8	22	ND	4	4.1	4	1.6
01-MGH-035C	Dundonald	OTH-084	Grab	Clinopyroxenite	375	28	84	306	344	10	17	ND	8	384.6	70.5	63.2
01-MGH-035D	Dundonald	OTH-084	Grab	Clinopyroxenite	380	384	73	267	205	9	13	ND	8	11.5	19	11.7
01-MGH-035E	Dundonald	OTH-084	Grab	Dunite	2609	35	192	7090	36	3	5	2	ND	15.7	4.3	ND
01-MGH-043A	Dundonald	OTH-084	Core	Wehrlite	1325	102	171	3153	181	9	23	2	9	0.8	ND	1.3
01-MGH-043B	Dundonald	OTH-084	Core	Clinopyroxenite	337	53	72	3253	73	15	33	ND	15	2.9	1.4	ND
01-MGH-043C	Dundonald	OTH-084	Core	Wehrlite	1242	137	178	3281	114	7	13	5	7	3.0	1.4	ND
01-MGH-043D	Dundonald	OTH-084	Core	Clinopyroxenite	359	66	65	3593	44	13	30	ND	39	8.0	5.2	ND
01-MGH-043E	Dundonald	OTH-084	Core	Wehrlite	1156	241	170	4316	190	6	14	5	9	21.6	2.6	10.2

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 7 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd [illegible] ppb	Au 0.9 ppb
01-MGH-043F	Dundonald	OTH-084	Core	Clinopyroxenite	350	119	75	2872	99	11	22	ND	13	3.6	3.6	ND
01-MGH-043G	Dundonald	OTH-084	Core	Wehrlite	1284	100	179	4139	662	6	14	9	6	1.0	2.2	ND
01-MGH-043H	Dundonald	OTH-084	Core	Clinopyroxenite	281	139	70	2042	133	14	25	ND	14	8.4	7.0	1.6
01-MGH-043I	Dundonald	OTH-084	Core	Wehrlite	1589	20	166	3995	106	9	21	3	5	3.1	8.0	ND
01-MGH-044A	Dundonald	OTH-084	Core	Clinopyroxenite	381	37	65	3736	57	14	29	ND	28	ND	ND	ND
01-MGH-044B	Dundonald	OTH-084	Core	Anorthosite	66	10	20	147	ND	41	263	2	98	ND	ND	ND
01-MGH-044C	Dundonald	OTH-084	Core	Clinopyroxenite	306	74	69	1394	77	13	27	ND	16	11.2	3.3	ND
01-MGH-045A	Dundonald	OTH-084	Core	Clinopyroxenite	301	28	76	589	72	14	27	ND	21	9.0	6.4	ND
01-MGH-045B	Dundonald	OTH-084	Core	Clinopyroxenite	294	138	73	234	109	16	29	ND	61	9.6	4.0	8.0
01-MGH-045C	Dundonald	OTH-084	Core	Clinopyroxenite	186	737	78	36	561	18	34	ND	48	ND	ND	3.5
01-CAM-001A	Mann Intrusion	OTH-085	Grab	Wehrlite or lherzolite	1765	10	179	3729	122	5	9	2	4	8.3	6.9	ND
01-CAM-002A	Mann Intrusion	OTH-085	Grab	Wehrlite	890	70	141	948	99	3	4	2	3	2.9	1.3	2.3
01-CAM-003A	Mann Intrusion	OTH-085	Grab	Websterite	769	893	93	6094	530	6	7	ND	6	82.0	ND	156.3
01-CAM-004A	Mann Intrusion	OTH-085	Grab	Clinopyroxenite	160	24	50	4036	10	7	8	3	11	265.5	44.8	4.6
01-CAM-005A	Mann Intrusion	OTH-085	Grab	Peridotite to lherzolite	996	3	167	1442	42	5	9	2	8	1.5	ND	ND
01-CAM-006A	Mann Intrusion	OTH-085	Grab	Peridotite to lherzolite	1076	6	152	3015	49	4	6	ND	4	4.9	2.7	ND
01-CAM-006B	Mann Intrusion	OTH-085	Core	Peridotite to wehrlite	1696	26	108	2514	111	5	7	4	10	0.5	ND	ND
01-CAM-007A	Mann Intrusion	OTH-085	Core	Peridotite to wehrlite	1616	35	108	6227	100	6	7	2	10	ND	ND	ND
01-CAM-008A	Mann Intrusion	OTH-085	Core	Wehrlite	1559	28	113	3126	82	6	8	3	37	1.8	3.6	ND
01-CAM-009A	Mann Intrusion	OTH-085	Core	Wehrlite	1337	14	110	3904	87	5	8	5	6	7.3	1.2	ND
01-CAM-010A	Mann Intrusion	OTH-085	Core	Gabbro	70	32	46	604	29	11	17	5	81	37.3	18.6	ND
01-CAM-011A	Mann Intrusion	OTH-085	Core	Gabbro	23	5	40	32	ND	25	53	ND	113	1.0	ND	ND
01-CAM-012A	Mann Intrusion	OTH-085	Core	Quartz gabbro	13	7	61	26	ND	37	93	6	49	ND	ND	ND
01-CAM-013A	Mann Intrusion	OTH-085	Core	Metagabbro to metadiorite	4	13	44	19	ND	49	118	10	73	ND	ND	ND
01-CAM-014A	Mann Intrusion	OTH-085	Core	Gabbro?	49	22	54	111	30	24	50	3	65	1.6	ND	ND
01-CAM-015A	Mann Intrusion	OTH-085	Core	Metagabbro to metaqz-gabbro	12	30	48	24	37	30	67	3	95	ND	ND	ND
01-CAM-016A	Mann Intrusion	OTH-085	Core	Gabbronorite to opx-gabbro	45	207	91	31	341	21	36	8	92	ND	ND	ND
01-CAM-017A	Mann Intrusion	OTH-085	Core	Gabbro or mesogabbro	24	168	59	22	141	19	36	4	117	ND	ND	ND
01-CAM-018A	Mann Intrusion	OTH-085	Core	Peridotite or pyroxenite	180	16	28	260	23	3	ND	9	189	ND	ND	ND
01-MGH-001A	Mann Intrusion	OTH-085	Core	Lherzolite	2101	5	134	1610	73	6	10	3	23	3.5	5.0	ND
01-MGH-001B	Mann Intrusion	OTH-085	Core	Mesogabbro-leucogabbro	61	51	29	107	26	15	84	25	646	ND	ND	ND
01-MGH-002A	Mann Intrusion	OTH-085	Core	Lherzolite	1997	7	129	1614	111	6	10	2	9	3.9	5.6	ND
01-MGH-002B	Mann Intrusion	OTH-085	Core	Mesogabbro	1560	62	108	2028	641	10	5	2	78	4.4	2.4	2.3
01-MGH-002C	Mann Intrusion	OTH-085	Core	Peridotite	65	59	33	111	19	15	78	23	737	ND	ND	ND
01-MGH-003A	Mann Intrusion	OTH-085	Core	Lherzolite-wehrlite	1678	26	148	5752	96	5	11	3	4	3.4	2.0	ND
01-MGH-003B	Mann Intrusion	OTH-085	Core	Mesogabbro	407	5	50	157	15	22	ND	18	1147	0.5	1.9	ND
01-MGH-003C	Mann Intrusion	OTH-085	Core	Lherzolite-harzburgite	1800	21	147	5741	78	5	8	3	7	3.6	3.4	ND
01-MGH-003D	Mann Intrusion	OTH-085	Core	Lherzolite	2311	11	135	5655	95	4	7	2	ND	1.9	1.3	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-MGH-003E	Mann Intrusion	OTH-085	Core	Gabbro-lherzolite (harzburgite)	1032	74	131	1210	108	7	13	ND	3	1.8	0.9	ND
01-MGH-004A	Mann Intrusion	OTH-085	Core	Dunite	2163	8	129	1983	71	4	5	ND	ND	3.0	2.3	ND
01-MGH-004B	Mann Intrusion	OTH-085	Core	Dunite	1781	4	88	6712	22	3	5	ND	ND	5.4	3.0	ND
01-MGH-004D	Mann Intrusion	OTH-085	Core	Dunite-lherzolite	1711	13	63	4192	49	5	7	ND	3	7.2	7.9	1.0
01-MGH-004E	Mann Intrusion	OTH-085	Core	Lherzolite	1785	166	137	3418	35	6	9	ND	5	3.5	4.7	ND
01-MGH-005A	Mann Intrusion	OTH-085	Core	Lherzolite	2070	11	172	5111	192	7	15	2	4	42.6	99.1	3.9
01-MGH-005B	Mann Intrusion	OTH-085	Core	Peridotite	1481	6	125	6307	111	5	7	ND	69	22.3	42.3	2.0
01-MGH-005C	Mann Intrusion	OTH-085	Core	Dunite	1895	5	135	5267	78	5	8	2	6	10.3	6.0	ND
01-RAS-001A	Mann Intrusion	OTH-085	Core	Mesogabbro-leucogabbro	83	96	48	224	166	11	16	4	64	ND	ND	ND
01-RAS-002A	Mann Intrusion	OTH-085	Core	Peridotite	1509	4	145	3565	37	6	12	ND	5	1.6	ND	ND
01-RAS-003A	Mann Intrusion	OTH-085	Core	Peridotite	1886	19	165	17176	33	4	6	ND	2	9.1	5.3	ND
01-RAS-004A	Mann Intrusion	OTH-085	Core	Dunite	1943	9	134	22912	51	4	6	2	7	2.9	1.0	ND
01-RAS-005A	Mann Intrusion	OTH-085	Core	Dunite	1790	13	153	13301	65	4	9	3	4	12.4	18.6	ND
01-RAS-006A	Mann Intrusion	OTH-085	Core	Dunite	1600	13	151	2808	70	5	8	3	15	10.2	7.4	ND
01-RAS-007A	Garrison Intrusion	OTH-086	Grab	Dunite	2348	9	105	4255	12	4	4	ND	ND	21.9	11.3	ND
01-RAS-008A	Garrison Intrusion	OTH-086	Grab	Dunite	2434	17	95	4436	73	4	6	ND	ND	18.3	21.3	ND
01-RAS-009A	Garrison Intrusion	OTH-086	Grab	Dunite	1601	ND	156	5167	88	4	5	ND	ND	22.9	15.3	1.0
01-RAS-010A	Garrison Intrusion	OTH-086	Grab	Lherzolite	788	557	183	3112	32	6	11	ND	2	28.6	72.0	8.0
01-RAS-011A	Garrison Intrusion	OTH-086	Grab	Clinopyroxenite	556	268	86	3421	35	8	12	ND	3	20.4	55.3	7.8
01-RAS-012A	Garrison Intrusion	OTH-086	Grab	Mesogabbro	419	413	96	1338	1821	9	12	ND	32	5.0	5.0	1.8
01-RAS-013A	Garrison Intrusion	OTH-086	Grab	Mesogabbro	71	64	50	191	52	11	25	4	119	ND	ND	ND
01-RAS-014A	Garrison Intrusion	OTH-086	Grab	Mesogabbro	38	17	44	51	161	26	49	ND	12	ND	ND	ND
01-RAS-015A	Garrison Intrusion	OTH-086	Grab	Hornblende-gabbro	49	100	65	69	118	18	37	12	141	ND	ND	ND
01-RAS-016A	Garrison Intrusion	OTH-086	Grab	Mesogabbro	3	104	48	26	66	69	186	12	165	ND	ND	ND
01-RAS-017A	Garrison Intrusion	OTH-086	Grab	Mesogabbro	28	42	62	27	39	40	100	19	201	ND	ND	ND
01-RAS-018A	Garrison Intrusion	OTH-086	Grab	Metagabbro	47	218	68	103	223	32	94	11	195	ND	ND	ND
01-RAS-019A	Garrison Intrusion	OTH-086	Grab	Wehrlite	1120	736	164	1431	13642	6	13	2	3	68.8	63.4	26.0
01-RAS-020A	Garrison Intrusion	OTH-086	Grab	Pegmatoidal metagabbro	112	192	48	944	80	10	24	17	112	ND	ND	ND
01-RAS-021A	Garrison Intrusion	OTH-086	Grab	Mesogabbro	59	48	53	161	105	15	36	16	138	ND	ND	ND
01-RAS-111A	Centre Hill	OTH-087	Grab	Clinopyroxenite	316	30	71	2511	12	13	28	2	54	4.3	2.7	ND
01-RAS-112A	Centre Hill	OTH-087	Grab	Dunite	1823	9	180	5068	64	5	8	ND	ND	22.9	32.6	1.3
01-RAS-113A	Centre Hill	OTH-087	Grab	Dunite	1530	4	168	3931	16	7	25	ND	7	6.8	6.2	ND
01-RAS-114A	Centre Hill	OTH-087	Grab	Clinopyroxenite	482	68	72	3372	59	9	17	ND	8	4.3	4.3	ND
01-RAS-115A	Centre Hill	OTH-087	Grab	Dunite	1601	12	188	5285	123	5	10	ND	4	7.9	7.4	ND
01-RAS-116A	Centre Hill	OTH-087	Grab	Clinopyroxenite	435	44	82	3558	102	10	15	ND	15	1.5	1.0	ND
01-RAS-117A	Centre Hill	OTH-087	Grab	Clinopyroxenite	275	84	74	987	18	13	19	ND	36	15.1	19.6	ND
01-RAS-118A	Centre Hill	OTH-087	Grab	Clinopyroxenite	253	124	81	278	47	15	30	ND	46	106.6	181.5	4.6
01-RAS-119A	Centre Hill	OTH-087	Grab	Clinopyroxenite	269	82	77	397	37	12	14	ND	20	102.1	239.7	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-RAS-119B	Centre Hill	OTH-087	Grab	Leucogabbro	60	157	35	83	220	34	99	ND	525	6.7	32.6	ND
01-RAS-119C	Centre Hill	OTH-087	Grab	Melagabbro	200	156	68	295	49	21	59	ND	75	62.7	57.0	ND
01-RAS-120A	Centre Hill	OTH-087	Grab	Mesogabbro-clinopyroxenite	202	124	65	224	49	17	35	3	147	64.6	158.1	2.9
01-RAS-121A	Centre Hill	OTH-087	Grab	Clinopyroxenite	263	550	78	153	350	19	37	2	67	0.6	ND	ND
01-RAS-122A	Centre Hill	OTH-087	Grab	Metagabbro	194	23	84	31	28	17	42	17	178	ND	ND	ND
01-RAS-123A	Centre Hill	OTH-087	Grab	Clinopyroxenite	424	632	154	66	280	15	39	ND	19	0.9	ND	5.8
01-RAS-124A	Centre Hill	OTH-087	Grab	Melagabbro	125	227	90	24	256	15	38	5	211	ND	ND	ND
01-RAS-125A	Centre Hill	OTH-087	Grab	Leucogabbro	ND	6	27	12	10	56	167	2	139	ND	ND	ND
01-RAS-126A	Centre Hill	OTH-087	Grab	Mesogabbro	ND	11	37	11	30	53	164	2	335	ND	ND	ND
01-RAS-127A	Centre Hill	OTH-087	Grab	Leucogabbro	86	60	70	25	760	28	86	11	247	0.8	ND	ND
01-RAS-128A	Centre Hill	OTH-087	Grab	Mesogabbro	32	185	51	14	1262	31	109	14	238	ND	ND	ND
01-RAS-129A	Centre Hill	OTH-087	Grab	Basalt dike or chilled margin	474	181	98	1587	162	20	62	2	44	6.5	5.3	ND
01-RAS-130A	Centre Hill	OTH-087	Grab	Hyaloclastite	432	169	93	1468	110	18	58	3	92	6.8	5.7	ND
01-MGH-020A	Munro	OTH-088	Grab	Dunite	1533	82	115	1870	139	5	7	ND	2	5.4	9.7	ND
01-MGH-021A	Munro	OTH-088	Grab	Dunite	2342	7	148	7794	133	3	5	ND	ND	22.7	39.0	1.7
01-MGH-022A	Munro	OTH-088	Grab	Metamesogabbro	42	39	57	92	119	31	65	7	157	ND	ND	ND
01-MGH-022B	Munro	OTH-088	Grab	Mesogabbro	39	94	54	108	310	29	64	14	162	ND	ND	ND
01-MGH-023A	Munro	OTH-088	Grab	Dunite	1327	36	113	6897	95	5	8	ND	ND	7.3	18.9	ND
01-MGH-024A	Munro	OTH-088	Grab	Mesogabbro	45	77	64	99	372	30	61	5	88	ND	ND	ND
01-MGH-025A	Munro	OTH-088	Grab	Mesogabbro	64	194	60	152	84	33	116	30	167	2.9	2.1	ND
01-MGH-026A	Munro	OTH-088	Grab	lherzolite-dunite	1954	66	136	2540	231	4	7	2	ND	9.1	17.7	ND
01-MGH-027A	Munro	OTH-088	Grab	Lherzolite-dunite	1326	115	78	6701	247	4	5	ND	ND	7.4	15.3	ND
01-MGH-027B	Munro	OTH-088	Grab	Lherzolite-dunite	1947	70	133	6239	286	4	7	ND	ND	6.1	10.1	1.0
01-MGH-027C	Munro	OTH-088	Grab	Lherzolite	1586	147	164	3782	50	9	25	2	5	3.4	4.9	1.3
01-MGH-027D	Munro	OTH-088	Grab	Melagabbro-clinopyroxenite	284	103	58	2422	ND	13	31	ND	23	3.0	2.5	ND
01-MGH-027E	Munro	OTH-088	Grab	Clinopyroxenite-melagabbro	211	578	70	199	790	19	46	ND	33	13.2	3.2	7.5
01-MGH-027F	Munro	OTH-088	Grab	Melagabbro	326	301	75	957	154	21	67	8	65	15.7	31.7	ND
01-MGH-028A	Munro	OTH-088	Grab	Mesogabbro	53	101	67	22	143	19	60	11	226	ND	ND	ND
01-MGH-046A	Munro	OTH-088	Grab	Dunite-lherzolite	1009	44	161	3639	107	6	12	2	3	12.9	17.4	3.6
01-MGH-046B	Munro	OTH-088	Grab	Melagabbro	264	233	68	3470	297	13	16	ND	30	13.5	7.3	1.7
01-MGH-046C	Munro	OTH-088	Grab	Mesogabbro	104	85	47	664	113	15	20	3	173	ND	ND	2.6
01-MGH-046D	Munro	OTH-088	Grab	Mesogabbro	22	67	58	39	336	37	84	4	155	ND	ND	ND
01-MGH-046E	Munro	OTH-088	Grab	Mesogabbro	138	164	50	563	501	25	79	4	103	5.2	3.8	ND
01-ERD-108A	Lake Abitibi	OTH-089	Grab	Metagabbronorite to ol.-gabbro	132	46	36	356	91	6	ND	3	349	ND	ND	ND
01-ERD-109A	Lake Abitibi	OTH-089	Grab	Metagabbro	94	143	70	51	233	8	4	4	325	ND	ND	ND
01-ERD-110A	Lake Abitibi	OTH-089	Grab	Meta-olivine-gabbronorite	58	163	70	24	321	15	36	3	290	0.9	ND	ND
01-RAS-131A	Ghost Range	OTH-090	Grab	Wehrlite	1167	12	158	3458	38	3	4	ND	5	2.4	3.7	ND
01-RAS-132A	Ghost Range	OTH-090	Grab	Clinopyroxenite	315	4	71	4879	ND	8	16	ND	11	2.2	1.4	0.9

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-RAS-133A	Ghost Range	OTH-090	Grab	Mesogabbro	220	46	43	1815	64	6	4	19	222	2.4	2.8	ND
01-RAS-134A	Ghost Range	OTH-090	Grab	Melagabbro	141	41	43	1196	105	7	6	9	150	5.6	7.3	ND
01-RAS-135A	Ghost Range	OTH-090	Grab	Mesogabbro	110	56	42	787	84	7	7	4	144	94.7	74.9	ND
01-RAS-136A	Ghost Range	OTH-090	Grab	Mesogabbro	ND	23	57	16	226	32	97	15	166	ND	ND	ND
01-RAS-137A	Ghost Range	OTH-090	Grab	Mesogabbro	59	113	34	157	183	12	25	10	213	1.5	ND	1.8
01-RAS-138A	Ghost Range	OTH-090	Grab	Mesogabbro	35	124	38	31	57	13	31	20	199	ND	ND	ND
01-RAS-139A	Ghost Range	OTH-090	Grab	Mesogabbro	28	67	53	31	82	23	73	12	147	ND	ND	ND
01-RAS-140A	Ghost Range	OTH-090	Grab	Mesogabbro	90	320	75	32	536	16	44	13	155	ND	ND	ND
01-MGH-047A	Nordica-Watabeag	OTH-091	Grab	Melagabbro	2032	2622	94	312	5618	2	ND	41	328	169.8	653.1	57.6
01-MGH-047B	Nordica-Watabeag	OTH-091	Grab	Chromitite	1368	399	197	175779	52	3	5	8	23	64.0	320.7	3.6
01-MGH-048A	Nordica-Watabeag	OTH-091	Grab	Mesogabbro	523	97	44	697	537	2	ND	89	192	162.1	500.7	ND
01-MGH-048B	Nordica-Watabeag	OTH-091	Grab	Pyroxenite	827	673	121	1180	2578	26	26	ND	6	30.2	77.9	ND
01-MGH-048C	Nordica-Watabeag	OTH-091	Grab	Mesogabbro	935	151	74	361	1018	3	ND	27	124	65.7	455.8	ND
01-MGH-049A	Nordica-Watabeag	OTH-091	Grab	Peridotite?	1133	103	155	7511	257	5	5	4	11	14.5	10.4	ND
01-MGH-049B	Nordica-Watabeag	OTH-091	Grab	Peridotite?	957	17	102	12152	110	5	3	29	11	2.7	5.1	ND
01-MGH-049C	Nordica-Watabeag	OTH-091	Grab	Mesogabbro	560	193	64	1021	1276	4	ND	72	359	37.9	186.2	ND
01-MGH-049D	Nordica-Watabeag	OTH-091	Grab	Metagabbro	195	26	49	1030	111	6	ND	53	128	8.1	9.2	ND
01-MGH-049E	Nordica-Watabeag	OTH-091	Grab	Mesogabbro	368	26	64	987	30	4	ND	50	144	63.9	345.8	ND
01-CAM-196A	Tisdale Peridotite	OTH-092	Grab	Peridotite	977	67	144	2541	105	14	37	2	19	5.0	9.2	ND
01-CAM-190A	Otto Stock	OTH-093	Grab	Pyroxenite	137	380	74	298	166	60	57	113	2418	4.8	12.4	10.2
01-CAM-191A	Otto Stock	OTH-093	Grab	Alk.fp-syen. to qz-alk. fp-syen.	6	17	ND	ND	ND	4	34	121	1893	ND	ND	ND
01-CAM-192A	Otto Stock	OTH-093	Grab	Syenite	46	9	ND	57	ND	13	202	99	1317	0.6	0.9	ND
01-CAM-192B	Otto Stock	OTH-093	Grab	Granite to syenite	33	37	13	61	58	18	167	126	723	0.9	1.2	1.0
01-CAM-193A	Otto Stock	OTH-093	Grab	Pyroxenite	177	128	61	943	138	31	88	39	451	3.0	3.1	ND
01-CAM-194A	Otto Stock	OTH-093	Grab	Pyroxene-hornblende-gabbro	219	77	63	1041	100	21	102	168	378	1.8	2.2	ND
01-CAM-195A	Otto Stock	OTH-093	Grab	Pyroxenite	65	651	48	201	257	41	313	86	1540	3.4	12.5	3.0
01-CAM-197A	Otto Stock	OTH-093	Grab	Qz-alk. fp-syenite to qz-syenite	17	ND	ND	29	ND	6	45	87	249	ND	ND	ND
01-CAM-198A	Otto Stock	OTH-093	Grab	Alkali feldspar-syenite	66	89	27	ND	10	30	43	140	3147	2.0	2.9	7.8
01-CAM-199A	Otto Stock	OTH-093	Grab	Lamprophyre dike	83	68	45	513	66	22	107	66	711	3.6	4.2	ND
01-RAS-297A	James Lake Dike	OTH-094	Grab	Melamesogabbro	236	172	69	441	268	14	44	41	342	29.3	34.3	1.8
01-RAS-298A	James Lake Dike	OTH-094	Grab	Melamesogabbro	1550	3518	143	878	6230	16	26	7	37	7.2	12.8	9.3
01-RAS-299A	James Lake Dike	OTH-094	Grab	Melagabbro	5597	4027	819	229	5430	3	ND	4	7	36.3	88.5	16.6
01-RAS-300A	James Lake Dike	OTH-094	Grab	Massive sulphides	344	1560	64	432	1407	13	42	33	193	174.8	451.8	26.3
01-RAS-291A	James Lake Gabbro	OTH-095	Grab	Mesogabbro	207	156	63	363	312	13	43	48	270	25.2	32.5	10.1
01-RAS-292A	James Lake Gabbro	OTH-095	Grab	Mesogabbro-melagabbro	261	164	71	501	309	12	38	45	211	34.1	43.6	9.1
01-RAS-293A	James Lake Gabbro	OTH-095	Grab	Pyroxenite now hornblendite	300	20	66	688	49	30	12	26	153	9.8	5.2	ND
01-RAS-294A	James Lake Gabbro	OTH-095	Grab	Footwall basalt with trace sul	1017	1274	61	111	3765	7	55	79	590	14.8	19.9	12.2
01-RAS-295A	James Lake Gabbro	OTH-095	Grab	Pyroxenite	662	210	105	1026	262	11	19	ND	9	2.8	2.8	2.9

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-RAS-296A	James Lake Gabbro	OTH-095	Grab	Mesogabbro	186	410	60	117	716	22	77	32	323	ND	ND	1.3
01-ERD-097A	Copperfields-Miles	OTH-096	Grab	Meta-anorthosite/metaleucogab.	ND	9	31	16	107	14	19	9	762	ND	ND	ND
01-ERD-097B	Copperfields-Miles	OTH-096	Grab	Felsic qz-feldspar crystal tuff	7	4	ND	24	ND	8	121	44	192	ND	ND	ND
01-ERD-098A	Copperfields-Miles	OTH-096	Grab	Felsic quartz crystal tuff	ND	17	ND	23	16	5	125	54	209	ND	ND	ND
01-ERD-099A	Copperfields-Miles	OTH-096	Grab	Intermediate lithic crystal tuff	198	ND	32	546	ND	11	100	22	137	0.8	ND	ND
01-ERD-100A	Copperfields-Miles	OTH-096	Grab	Mafic to intermediate tuff	193	51	33	520	15	13	123	7	209	0.9	ND	ND
01-ERD-101A	Copperfields-Miles	OTH-096	Grab	Mafic-int. crystal lithic tuff	228	55	39	559	12	12	99	14	360	0.7	ND	ND
01-ERD-102A	Copperfields-Miles	OTH-096	Grab	Fel. to int. crystal tuff	26	5	13	104	66	13	142	51	115	0.7	ND	ND
01-ERD-103A	Copperfields-Miles	OTH-096	Grab	Intermediate crystal tuff	231	3	41	646	ND	13	109	51	307	1.0	ND	ND
01-ERD-104A	Copperfields-Miles	OTH-096	Grab	Granite to syenite	ND	2	ND	20	ND	16	159	15	100	ND	ND	ND
01-ERD-105A	Copperfields-Miles	OTH-096	Grab	Metagabbro	44	23	35	79	111	15	38	11	124	2.9	2.4	ND
01-ERD-106A	Copperfields-Miles	OTH-096	Grab	Metasedimentary or metavolc.	3	3	ND	10	310	19	195	21	110	ND	ND	ND
01-ERD-107A	Copperfields-Miles	OTH-096	Grab	Mafic metavolcanic	81	18	54	252	92	11	ND	24	307	5.6	1.7	ND
01-RAS-301A	Copperfields-Miles	OTH-096	Grab	Quartz-gabbro	116	863	59	72	1875	24	58	3	207	49.7	76.7	5.0
01-RAS-302A	Copperfields-Miles	OTH-096	Grab	Leucogabbro?	34	247	50	168	570	11	21	12	140	1.9	1.3	2.2
01-RAS-303A	Copperfields-Miles	OTH-096	Core	Mesogabbro	73	494	30	186	284	16	20	ND	141	28.9	56.8	12.8
01-RAS-304A	Copperfields-Miles	OTH-096	Core	Quartz-mesogabbro	231	1076	89	205	2082	13	16	ND	208	33.1	77.1	1.2
01-RAS-305A	Copperfields-Miles	OTH-096	Core	Mesogabbro	105	716	52	224	718	14	36	ND	208	232.1	495.0	102.0
01-RAS-306A	Copperfields-Miles	OTH-096	Core	Quartz-mesogabbro	151	454	57	176	1130	14	18	ND	194	ND	ND	ND
01-RAS-307A	Copperfields-Miles	OTH-096	Core	Quartz-mesogabbro	41	146	30	222	254	14	28	6	139	0.5	1.3	ND
01-RAS-308A	Copperfields-Miles	OTH-096	Core	Mesogabbro-leucogabbro	203	473	67	145	1584	11	13	5	71	7.0	9.6	1.1
01-RAS-309A	Copperfields-Miles	OTH-096	Core	Semi-massive sul in leucogabbro to quartz-gabbro	132	393	49	208	660	8	13	10	107	7.6	6.6	ND
01-RAS-310A	Copperfields-Miles	OTH-096	Core	Semi-massive sul in leucogabbro?	565	3191	76	243	3644	12	31	ND	90	ND	ND	ND
01-RAS-311A	Copperfields-Miles	OTH-096	Core	Quartz-gabbro to diorite	1393	3836	187	258	7868	6	20	ND	97	0.7	1.0	ND
01-RAS-312A	Copperfields-Miles	OTH-096	Core	Mesogabbro to quartz-gabbro	486	2104	95	200	3342	11	21	ND	99	13.5	14.5	ND
01-RAS-313A	Copperfields-Miles	OTH-096	Core	Mesogabbro?	665	2144	130	293	3218	13	28	ND	26	ND	ND	ND
01-RAS-314A	Copperfields-Miles	OTH-096	Core	Semi-massive sul in qz-gabbro?	2265	7756	256	154	11692	6	68	ND	2	ND	ND	ND
01-RAS-315A	Copperfields-Miles	OTH-096	Core	Quartz-gabbro	3884	25325	429	146	24248	3	33	ND	ND	3.8	ND	ND
01-CMV-038A	Caribou Lake	OTH-097	Grab	Olivine-gabbronorite	129	331	57	371	110	30	45	7	255	1.4	1.3	1.2
01-CMV-039A	Caribou Lake	OTH-097	Grab	Olivine-gabbronorite	703	125	113	2920	289	13	27	4	114	ND	ND	ND
01-CMV-040A	Caribou Lake	OTH-097	Grab	Metagabbro	109	68	46	324	105	9	37	16	348	ND	ND	ND
01-CMV-041A	Caribou Lake	OTH-097	Grab	Metagabbro	105	41	48	472	108	8	33	3	309	ND	ND	ND
01-CMV-042A	Caribou Lake	OTH-097	Grab	Norite	71	29	60	257	85	11	30	2	305	ND	ND	ND
01-CMV-043A	Caribou Lake	OTH-097	Grab	Gabbronorite	25	23	47	93	79	16	70	9	335	ND	ND	ND
01-CMV-044A	Caribou Lake	OTH-097	Grab	Gabbronorite	26	29	52	119	107	21	83	11	324	ND	ND	ND
01-CMV-045A	Caribou Lake	OTH-097	Grab	Gabbronorite	101	101	119	58	530	12	38	2	341	0.6	1.0	ND
01-CMV-046A	Caribou Lake	OTH-097	Grab	Gabbronorite	3	17	39	37	123	12	55	8	387	ND	ND	ND
01-CMV-047A	Caribou Lake	OTH-097	Grab	Pegmatitic metagabbro	9	17	36	21	176	37	61	6	423	ND	ND	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name	Ni	Cu	Co	Cr	Se	Y	Zr	Rb	Sr	Pt	Pd	Au
				(Detection Limit-->)	2 ppm	2 ppm	12 ppm	4 ppm	7 ppb	1 ppm	3 ppm	2 ppm	2 ppm	0.5 ppb	0.9 ppb	0.9 ppb
01-ERD-111A	Caribou Lake	OTH-097	Grab	Gabbronorite	57	38	52	110	76	17	25	5	332	ND	ND	ND
01-ERD-112A	Caribou Lake	OTH-097	Grab	Monzogranite	2	4	ND	ND	ND	19	160	107	295	ND	ND	ND
01-ERD-114A	Caribou Lake	OTH-097	Grab	Gabbronorite	69	43	55	167	206	9	ND	3	349	ND	ND	ND
01-ERD-114B	Caribou Lake	OTH-097	Grab	Metagabbronorite	66	256	64	148	1245	8	ND	2	342	0.8	1.0	ND
01-ERD-115A	Caribou Lake	OTH-097	Grab	Gabbronorite	63	30	48	201	58	11	8	4	369	ND	ND	ND
01-ERD-116A	Caribou Lake	OTH-097	Grab	Pegmatitic norite	79	58	49	232	140	8	ND	2	363	ND	ND	ND
01-ERD-117A	Caribou Lake	OTH-097	Grab	Olivine-norite	740	81	113	2481	169	11	15	4	192	2.2	1.4	ND
01-ERD-118A	Caribou Lake	OTH-097	Grab	Olivine-gabbronorite	13	14	63	61	198	17	15	7	306	ND	ND	ND
01-ERD-119A	Caribou Lake	OTH-097	Grab	Metagabbro	208	79	41	548	94	16	10	5	320	ND	ND	ND
01-ERD-120A	Caribou Lake	OTH-097	Grab	Metasediment?	6	10	ND	ND	35	24	215	50	342	ND	ND	ND
01-ERD-096A	Papineau	OTH-098	Grab	Metagabbro	5	17	41	12	113	11	28	5	715	0.8	ND	ND
95-RME-0160	McClintock	OTH-099	Grab	Norite	221	68	75	688	232	7	32	4	374	ND	ND	ND
95-RME-0161	McClintock	OTH-099	Grab	Ore	7000	4184	553	422	9682	7	31	3	303	0.6	11.4	2.1
95-RME-0162	McClintock	OTH-099	Grab	Ore host rock	381	897	97	340	1640	20	52	19	383	ND	1.2	3.3
95-RME-0163	McClintock	OTH-099	Grab	Norite	49	42	47	481	110	25	85	5	450	ND	ND	ND
01-ERD-051A	Little Papineau L.	OTH-100	Grab	Tonalite	32	67	18	ND	130	62	887	70	1393	ND	ND	ND
01-ERD-080A	Little Papineau L.	OTH-100	Grab	Tonalite	9	62	19	24	108	9	131	27	525	0.7	5.2	6.7
01-CMV-014A	Raglan Hills	OTH-101	Grab	Metagabbro	39	13	22	117	29	10	32	6	343	ND	ND	ND
01-CMV-015A	Raglan Hills	OTH-101	Grab	Metagabbro	114	22	37	269	18	13	34	5	322	3.4	5.2	ND
01-CMV-016A	Raglan Hills	OTH-101	Grab	Metagabbro	179	75	43	649	112	11	23	5	225	5.1	4.3	ND
01-CMV-017A	Raglan Hills	OTH-101	Grab	Metagabbro	33	22	40	54	17	23	58	5	153	ND	ND	ND
01-CMV-018A	Raglan Hills	OTH-101	Grab	Metagabbro	18	8	16	100	ND	8	27	8	429	ND	ND	ND
01-CMV-018B	Raglan Hills	OTH-101	Grab	Pegmatitic gabbro	10	40	57	16	76	31	61	11	519	ND	ND	ND
01-CMV-019A	Raglan Hills	OTH-101	Grab	Olivine-pyroxenite	595	ND	73	2693	27	9	16	3	23	ND	ND	ND
01-CMV-020A	Raglan Hills	OTH-101	Grab	Hornblendite	386	83	58	1365	66	17	35	6	72	0.9	ND	ND
01-CMV-021A	Raglan Hills	OTH-101	Grab	Metagabbro	49	98	48	73	109	12	39	7	389	0.6	ND	ND
01-CMV-022A	Raglan Hills	OTH-101	Grab	Metagabbro	203	200	46	552	835	44	139	2	295	1.3	ND	ND
01-CMV-023A	Raglan Hills	OTH-101	Grab	Metagabbro	87	10	46	359	14	23	121	10	467	ND	ND	ND
01-CMV-024A	Raglan Hills	OTH-101	Grab	Metagabbro	81	31	62	298	38	35	75	ND	147	ND	ND	ND
01-CMV-024B	Raglan Hills	OTH-101	Grab	Metagabbro	41	31	75	70	78	51	97	5	144	ND	ND	ND
01-CMV-025A	Raglan Hills	OTH-101	Grab	Metagabbro	21	17	43	77	130	56	166	4	174	ND	ND	ND
01-CMV-025B	Raglan Hills	OTH-101	Grab	Metagabbro	30	49	65	95	240	63	142	2	229	ND	ND	ND
01-CMV-026A	Raglan Hills	OTH-101	Grab	Pegmatitic metagabbro	221	ND	53	498	ND	16	37	31	250	ND	ND	ND
01-CMV-026B	Raglan Hills	OTH-101	Grab	Metagabbro	229	74	53	1050	57	22	54	7	224	4.5	2.3	2.0
01-CMV-027A	Raglan Hills	OTH-101	Grab	Amphibolite	184	34	75	926	93	26	52	20	101	3.8	1.5	ND
01-CMV-028A	Raglan Hills	OTH-101	Grab	Amphibolite	262	9	60	1509	17	18	27	8	59	ND	ND	ND
01-ERD-036A	Tudor	OTH-102	Grab	Pegmatitic gabbro	41	76	66	52	167	18	56	ND	427	ND	ND	ND
01-ERD-037A	Tudor	OTH-102	Grab	Metagabbro	110	82	60	61	223	14	36	ND	386	ND	ND	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni	Cu	Co	Cr	Se	Y	Zr	Rb	Sr	Pt	Pd	Au
					2 ppm	2 ppm	12 ppm	4 ppm	7 ppb	1 ppm	3 ppm	2 ppm	2 ppm	0.5 ppb	0.9 ppb	0.9 ppb
01-ERD-038A	Tudor	OTH-102	Grab	Gabbronorite	23	42	46	49	144	15	36	ND	435	ND	ND	ND
01-ERD-039A	Tudor	OTH-102	Grab	Gabbronorite	41	53	52	47	145	16	35	ND	380	ND	ND	ND
01-ERD-040A	Tudor	OTH-102	Grab	Olivine-gabbronorite	66	76	74	32	257	13	37	ND	445	ND	ND	ND
01-ERD-041A	Tudor	OTH-102	Grab	Metagabbro	82	39	59	241	56	17	39	2	305	ND	ND	ND
01-ERD-042A	Tudor	OTH-102	Grab	Metagabbro	112	34	54	113	94	23	57	ND	423	ND	ND	ND
01-ERD-043A	Tudor	OTH-102	Grab	Metagabbro	14	24	60	33	72	40	70	ND	321	ND	ND	ND
01-ERD-044A	Tudor	OTH-102	Grab	Metagabbro	23	19	52	32	39	39	76	ND	259	ND	ND	ND
01-ERD-045A	Tudor	OTH-102	Grab	Metagabbro	84	7	44	166	12	12	50	4	562	ND	ND	ND
01-ERD-046A	Tudor	OTH-102	Grab	Gabbronorite	31	16	34	51	20	10	44	3	576	ND	ND	ND
01-ERD-046B	Tudor	OTH-102	Grab	Gabbronorite	138	86	67	195	119	16	38	ND	387	ND	ND	ND
01-ERD-047A	Tudor	OTH-102	Grab	Gabbronorite	50	4	29	147	ND	8	34	ND	563	ND	ND	ND
01-ERD-048A	Tudor	OTH-102	Grab	Olivine-gabbronorite	176	48	53	880	93	12	30	ND	370	ND	ND	ND
01-ERD-049A	Tudor	OTH-102	Grab	Gabbronorite	154	42	42	195	71	9	36	ND	543	ND	ND	ND
01-ERD-050A	Tudor	OTH-102	Grab	Pegmatitic gabbronorite	98	73	49	361	98	15	41	ND	478	ND	ND	ND
01-ERD-052A	Tudor	OTH-102	Grab	Metagabbro	54	48	69	74	125	20	56	ND	385	ND	ND	ND
01-ERD-053A	Tudor	OTH-102	Grab	Altered gabbro	145	21	67	39	55	5	18	ND	296	ND	ND	ND
01-ERD-054A	Tudor	OTH-102	Grab	Gabbronorite	21	47	63	40	132	18	59	2	403	ND	ND	ND
01-ERD-055A	Tudor	OTH-102	Grab	Clinopyroxenite	68	76	46	62	187	29	86	2	74	ND	ND	ND
01-ERD-055B	Tudor	OTH-102	Grab	Magnetite layer	258	56	242	382	63	3	31	3	7	ND	ND	4.8
01-ERD-056A	Tudor	OTH-102	Grab	Gabbro	7	9	44	30	11	23	68	2	305	ND	ND	ND
01-ERD-057A	Tudor	OTH-102	Grab	Metagabbro	23	48	68	55	126	13	37	ND	430	ND	ND	ND
01-ERD-058A	Tudor	OTH-102	Grab	Gabbronorite	8	12	36	28	19	27	89	4	423	ND	ND	ND
01-ERD-059A	Tudor	OTH-102	Grab	Metagabbro	86	33	51	212	78	15	35	ND	313	ND	ND	ND
01-ERD-060A	Tudor	OTH-102	Grab	Metagabbro	29	11	56	138	15	25	39	9	137	ND	ND	ND
01-ERD-061A	Tudor	OTH-102	Grab	Tonalite	ND	49	25	15	175	31	315	5	170	ND	ND	23.9
01-ERD-062A	Tudor	OTH-102	Grab	Gabbro?	63	18	43	189	78	32	119	26	162	ND	ND	ND
01-ERD-063A	Tudor	OTH-102	Grab	Metagabbro	7	24	37	32	57	34	41	4	311	ND	ND	ND
01-ERD-064A	Tudor	OTH-102	Grab	Metagabbro	80	36	53	156	66	18	45	ND	415	ND	ND	ND
01-ERD-065A	Tudor	OTH-102	Grab	Metagabbro	67	77	57	21	107	22	87	3	252	ND	ND	ND
01-ERD-066A	Tudor	OTH-102	Grab	Pegmatitic gabbro	41	26	44	97	84	11	40	3	602	ND	ND	ND
01-CMV-008A	Lingham Lake	OTH-103	Grab	Metagabbro	79	67	61	70	171	18	125	19	340	ND	ND	ND
01-CMV-008B	Lingham Lake	OTH-103	Grab	Metagabbro	19	76	49	16	180	41	325	44	342	ND	ND	ND
01-CMV-009A	Lingham Lake	OTH-103	Grab	Lherzolite	601	8	123	2403	10	14	48	ND	51	0.5	ND	ND
01-CMV-009B	Lingham Lake	OTH-103	Grab	Olivine-pyroxenite?	461	11	142	563	ND	31	111	2	41	1.0	1.6	ND
01-CMV-010A	Lingham Lake	OTH-103	Grab	Pyroxenite	361	299	94	1826	200	17	57	2	25	4.5	3.2	1.1
01-CMV-011A	Lingham Lake	OTH-103	Grab	Clinopyroxenite	454	149	105	1397	119	16	48	11	25	3.2	2.7	ND
01-CMV-011B	Lingham Lake	OTH-103	Grab	Clinopyroxenite	244	12	45	1366	14	18	50	ND	73	1.5	ND	ND
01-CMV-012A	Lingham Lake	OTH-103	Grab	Lherzolite	495	60	88	1633	109	27	75	19	116	0.7	ND	1.3

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-CMV-013A	Lingham Lake	OTH-103	Grab	Metagabbro	38	11	42	76	10	31	124	12	265	ND	ND	ND
01-ERD-067A	Lingham Lake	OTH-103	Grab	Metagabbro	94	35	43	303	ND	8	27	3	449	0.6	ND	ND
01-ERD-068A	Lingham Lake	OTH-103	Grab	Leucogabbro	14	4	14	58	ND	20	196	66	172	ND	ND	ND
01-ERD-069A	Lingham Lake	OTH-103	Grab	Metagabbro	35	5	34	111	ND	12	42	120	79	ND	ND	ND
01-ERD-070A	Lingham Lake	OTH-103	Grab	Gabbro	37	11	39	113	9	17	106	22	328	ND	ND	ND
01-ERD-071A	Lingham Lake	OTH-103	Grab	Metagabbro	55	43	40	216	56	22	211	43	409	ND	ND	ND
01-ERD-072A	Lingham Lake	OTH-103	Grab	Metagabbro	49	28	35	118	16	19	186	38	432	ND	ND	ND
01-ERD-073A	Lingham Lake	OTH-103	Grab	Metagabbro	43	84	36	182	99	10	58	36	394	0.7	ND	1.5
01-ERD-074A	Lingham Lake	OTH-103	Grab	Metagabbro	36	40	31	166	71	11	80	22	305	ND	ND	ND
01-ERD-076A	Lingham Lake	OTH-103	Grab	Metagabbro	52	13	30	140	14	13	159	58	391	ND	ND	ND
01-ERD-077A	Lingham Lake	OTH-103	Grab	Metagabbro	37	3	18	104	ND	13	194	44	285	ND	ND	ND
01-ERD-078A	Lingham Lake	OTH-103	Grab	Metagabbro	36	41	27	144	24	17	80	43	353	ND	ND	5.4
01-ERD-079A	Lingham Lake	OTH-103	Grab	Metagabbro	20	174	43	65	140	13	72	10	268	1.0	ND	21.5
01-CMV-029A	Killer Creek	OTH-104	Grab	Metagabbro	15	91	24	57	20	17	80	27	591	0.6	ND	1.4
01-CMV-030A	Killer Creek	OTH-104	Grab	Metagabbro	10	77	15	39	20	10	66	22	672	0.6	ND	ND
01-CMV-031A	Killer Creek	OTH-104	Grab	Metagabbro	17	119	17	63	37	15	84	21	629	0.5	2.0	3.0
01-CMV-032A	Killer Creek	OTH-104	Grab	Hornblendite	243	124	59	609	32	20	57	16	443	1.8	1.0	1.6
01-CMV-033A	Killer Creek	OTH-104	Grab	Metagabbro	66	346	36	162	119	20	78	14	519	3.6	4.0	9.3
01-CMV-034A	Killer Creek	OTH-104	Grab	Pegmatitic gabbro	63	84	51	267	25	22	57	9	590	2.0	1.5	2.1
01-CMV-035A	Killer Creek	OTH-104	Grab	Metagabbro	51	135	37	156	78	19	35	2	315	2.0	5.5	4.1
01-CMV-037A	Killer Creek	OTH-104	Grab	Amphibolite	230	89	62	495	194	16	39	6	175	ND	ND	ND
01-ERD-081A	Mountain Grove	OTH-105	Grab	Metagabbro	75	31	50	571	73	20	45	16	218	0.7	ND	ND
01-ERD-082A	Mountain Grove	OTH-105	Grab	Metagabbro	46	28	38	62	58	37	214	46	420	ND	ND	ND
01-ERD-083A	Mountain Grove	OTH-105	Grab	Pegmatitic gabbro	203	32	75	241	55	7	58	40	800	ND	ND	ND
01-ERD-084A	Mountain Grove	OTH-105	Grab	Gabbro	87	84	81	65	203	18	63	9	516	ND	ND	ND
01-ERD-085A	Mountain Grove	OTH-105	Grab	Quartz-gabbro	141	12	54	193	138	86	153	7	95	ND	ND	ND
01-ERD-086A	Mountain Grove	OTH-105	Grab	Olivine-gabbronorite	17	18	38	26	96	54	253	20	664	ND	ND	ND
01-ERD-087A	Mountain Grove	OTH-105	Grab	Monzodiorite	16	3	21	55	19	20	197	66	172	ND	ND	ND
01-ERD-088A	Mountain Grove	OTH-105	Grab	Metagabbronorite	60	38	46	183	68	33	175	16	657	ND	ND	ND
01-ERD-089A	Mountain Grove	OTH-105	Grab	Olivine-gabbronorite	19	16	18	10	25	58	459	27	522	ND	ND	ND
01-ERD-090A	Mountain Grove	OTH-105	Grab	Gabbronorite	36	21	48	55	64	47	315	24	707	ND	ND	ND
01-ERD-091A	Mountain Grove	OTH-105	Grab	Olivine-gabbronorite	24	18	46	17	52	62	231	35	667	ND	ND	ND
01-ERD-092A	Mountain Grove	OTH-105	Grab	Metagabbronorite	7	6	ND	ND	17	61	454	44	400	ND	ND	ND
01-ERD-093A	Mountain Grove	OTH-105	Grab	Metagabbro	51	34	38	57	78	37	203	20	512	ND	ND	ND
01-ERD-094A	Mountain Grove	OTH-105	Grab	Pegmatitic gabbronorite	148	3	53	1072	34	18	52	45	116	ND	ND	ND
01-ERD-095A	Mountain Grove	OTH-105	Grab	Metagabbro	61	36	33	255	65	22	186	34	704	ND	ND	ND
01-ERD-001A	Lavant	OTH-106	Grab	Metagabbro	23	39	52	30	77	35	162	4	363	ND	ND	ND
01-ERD-001B	Lavant	OTH-106	Grab	Metagabbro	2	12	36	21	21	34	176	2	450	ND	ND	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-ERD-003A	Lavant	OTH-106	Grab	Hornblendite	233	364	81	214	1240	35	103	ND	198	ND	ND	ND
01-ERD-004A	Lavant	OTH-106	Grab	Pegmatitic gabbro	37	20	35	29	33	42	107	5	363	ND	ND	ND
01-ERD-005A	Lavant	OTH-106	Grab	Orthopyroxene-gabbro	65	114	67	49	163	15	40	ND	356	ND	ND	ND
01-ERD-006A	Lavant	OTH-106	Grab	Gabbro?	ND	9	15	13	16	41	341	63	263	ND	ND	ND
01-ERD-007A	Lavant	OTH-106	Grab	Metagabbro	42	55	32	83	84	17	74	32	336	ND	ND	ND
01-ERD-009A	Lavant	OTH-106	Grab	Metagabbro	ND	2	ND	12	ND	51	376	60	154	ND	ND	ND
01-ERD-009B	Lavant	OTH-106	Grab	Metagabbro	10	40	34	30	41	40	292	19	430	ND	ND	ND
01-ERD-010A	Lavant	OTH-106	Grab	Metagabbro	41	53	49	71	84	39	121	23	220	ND	ND	ND
01-ERD-011A	Lavant	OTH-106	Grab	Metagabbro	19	16	21	44	27	30	178	17	328	ND	ND	ND
01-ERD-012A	Lavant	OTH-106	Grab	Metagabbro	18	40	29	33	57	33	105	10	368	ND	ND	ND
01-ERD-013A	Lavant	OTH-106	Grab	Metagabbro	33	41	29	58	65	27	291	8	297	ND	ND	ND
01-ERD-014A	Lavant	OTH-106	Grab	Leucogabbro	18	43	26	66	47	12	100	15	389	ND	ND	ND
01-ERD-015A	Lavant	OTH-106	Grab	Gabbro	85	37	34	84	42	10	35	17	345	ND	ND	ND
01-ERD-016A	Lavant	OTH-106	Grab	Gabbronorite	152	50	39	304	96	11	36	9	267	ND	ND	ND
01-ERD-017A	Lavant	OTH-106	Grab	Gabbronorite	53	57	48	26	98	15	99	22	342	ND	ND	ND
01-ERD-018A	Lavant	OTH-106	Grab	Gabbronorite	80	12	27	303	14	3	ND	16	2	ND	ND	ND
01-ERD-019A	Lavant	OTH-106	Grab	Metagabbro	ND	4	ND	26	47	13	226	44	567	ND	ND	ND
01-CMV-001A	Wolfe Lake	OTH-107	Grab	Metagabbro	12	11	34	33	34	31	72	89	636	ND	ND	ND
01-CMV-001B	Wolfe Lake	OTH-107	Grab	Metagabbro	9	17	49	15	41	31	86	9	615	ND	ND	ND
01-CMV-002A	Wolfe Lake	OTH-107	Grab	Gabbro	44	16	42	295	37	29	86	8	584	ND	ND	ND
01-CMV-003A	Wolfe Lake	OTH-107	Grab	Metagabbro	30	7	32	48	57	51	267	77	618	ND	ND	ND
01-CMV-003B	Wolfe Lake	OTH-107	Grab	Metagabbro	26	15	37	70	30	15	91	8	1270	ND	ND	ND
01-CMV-004A	Wolfe Lake	OTH-107	Grab	Metagabbro	11	10	26	17	23	11	95	11	1573	ND	ND	1.5
01-CMV-005A	Wolfe Lake	OTH-107	Grab	Metagabbro	5	12	24	7	36	26	124	45	988	ND	ND	ND
01-CMV-006A	Wolfe Lake	OTH-107	Grab	Metagabbro	39	6	45	261	21	23	69	84	446	ND	ND	ND
01-CMV-007A	Wolfe Lake	OTH-107	Grab	Metagabbro	30	31	80	34	107	19	53	14	582	ND	ND	ND
01-ERD-020A	Donaldson Bay	OTH-108	Grab	Tonalite	ND	4	ND	31	12	19	211	39	598	ND	ND	ND
01-ERD-021A	Donaldson Bay	OTH-108	Grab	Tonalite	ND	2	ND	20	10	15	180	56	486	ND	ND	ND
01-ERD-021B	Donaldson Bay	OTH-108	Grab	Tonalite	ND	ND	ND	24	ND	12	191	56	474	ND	ND	ND
01-ERD-022A	Donaldson Bay	OTH-108	Grab	Tonalite	ND	5	16	37	11	11	195	60	562	ND	ND	ND
01-ERD-023A	Donaldson Bay	OTH-108	Grab	Tonalite	ND	3	ND	14	ND	14	190	41	518	ND	ND	ND
01-ERD-024A	Donaldson Bay	OTH-108	Grab	Tonalite	83	31	33	130	46	11	49	4	511	ND	ND	ND
01-ERD-025A	Donaldson Bay	OTH-108	Grab	Quartz-diorite	2	ND	ND	40	ND	15	209	47	559	ND	ND	ND
01-ERD-026A	Donaldson Bay	OTH-108	Grab	Tonalite	3	ND	12	38	ND	18	233	40	598	ND	ND	ND
01-ERD-026B	Donaldson Bay	OTH-108	Grab	Granodiorite	9	6	15	12	23	50	456	128	215	ND	ND	ND
01-ERD-027A	Donaldson Bay	OTH-108	Grab	Tonalite	ND	5	ND	26	11	16	192	55	576	ND	ND	ND
01-ERD-028A	Leo Lake	OTH-109	Grab	Gabbro	15	8	32	119	23	22	134	22	681	ND	ND	ND
01-ERD-029A	Leo Lake	OTH-109	Grab	Metagabbro	17	10	40	11	44	51	214	31	489	ND	ND	ND

Appendix 3 (cont.). Trace element geochemistry.

Sample Number	Intrusion	Number	Type	Rock Name (Detection Limit-->)	Ni 2 ppm	Cu 2 ppm	Co 12 ppm	Cr 4 ppm	Se 7 ppb	Y 1 ppm	Zr 3 ppm	Rb 2 ppm	Sr 2 ppm	Pt 0.5 ppb	Pd 0.9 ppb	Au 0.9 ppb
01-ERD-030A	Leo Lake	OTH-109	Grab	Metagabbro	6	4	ND	ND	ND	72	459	94	521	ND	ND	ND
01-ERD-031A	Leo Lake	OTH-109	Grab	Gabbronorite	23	9	35	104	41	28	123	21	422	ND	ND	ND
01-ERD-032A	Leo Lake	OTH-109	Grab	Olivine-gabbronorite	156	13	95	1008	33	16	57	9	213	ND	ND	ND
01-ERD-033A	Leo Lake	OTH-109	Grab	Gabbro	14	11	21	19	37	69	192	26	547	ND	ND	ND
01-ERD-034A	Leo Lake	OTH-109	Grab	Metagabbro	10	4	15	ND	16	65	408	59	544	ND	ND	ND
01-ERD-034B	Leo Lake	OTH-109	Grab	Gabbronorite	8	3	ND	ND	ND	63	283	59	528	ND	ND	ND
01-ERD-035A	Leo Lake	OTH-109	Grab	Metagabbro	39	41	72	31	139	27	79	8	476	ND	ND	ND

Appendix 4

Descriptions of the Mafic–Ultramafic Bodies Studied

Descriptions are arranged in ascending numerical order. The table below indicates the study area in which each intrusion is located. (Note: there are no descriptions for intrusions 20, 46 or 74. These intrusions were not sampled.)

Intrusion Name	OTH #
Abitibi Subprovince	
Abitibi Canyon/Pinard	77
Centre Hill Complex	87
Copperfields-Milestone Lake	96
Cunningham-Garnet	81
Dundonald	84
Garrison Intrusion	86
Ghost Range Complex	90
James Lake Dike	94
James Lake Gabbro	95
Kamiskotia	80
Lake Abitibi	89
Loveland Township	79
Mann Intrusion	85
Montcalm	78
Munro	88
Nordica/Watabeag Lake	91
Otto Stock	93
Peterlong Lake - Muskasenda	83
Sothman	82
Tisdale peridotite sill	92
Grenville Province	
Caribou Lake	97
Donaldson Bay	108
Killer Creek	104
Lavant	106
Leo Lake	109
Lingham Lake	103
McClintock	99
Mountain Grove	105
Papineau	98
Papineau Lake	100
Raglan Hills	101
Tudor	102
Wolfe Lake	107
Proterozoic	
Coldwell Complex	49
Crystal Lake	38
Hele Township area	39
Killala Lake	48
Logan Sills	45
Nipissing Diabase - Bruce M-Thessalon	72
Nipissing Diabase - Karalash Corners	71
Nipissing Diabase - Rose Twp-Basswood	73
Seagull Intrusion (Wolf Mountain)	40
Quetico Subprovince	
Abiwin Lake	33
Eva Lake	30
Kawene Intrusion	31
McQuat Lake/Stawson	27
Mud Lake	34
Nickelbee Lake/Fire Lake	29
North and South Elbow Lake	35
Nym Lake/Bergman	28
Samuels Lake	26

Intrusion Name	OTH #
Uchi/English River Subprovinces	
Bruce Lake	9
Dempster Lake	58
Dome-McDonough-Bateman	6
Golden Arm	3
Hammel Lake	4
July Falls	60
Kawashe Lake	57
McVicar Lake	56
Pakwash Lake	8
Peterson Property	7
Pipestone Bay	1
Pure Gold	5
Rex-Bug-Werner Lakes	11
Snakeweed Lake	10
Thierry Mine	59
Trout Bay	2
Wabigoon Subprovince	
Buck Lake	41
Caliper Lake	16
Caribou Stock	62
Chrome-Puddy Lakes	47
Cobb Bay/Sturgeon Lake North	24
Crooked Green	69
Denmark Lake/Rupert Lake	13
Dobie Intrusion	17
Grassy Portage	19
Gzowski	67
Handcuff Lake	25
Jackson/Ledingham	68
Jacobus	70
Junior Lake area	63
Kakagi Sills	14
Lash-Carpenter	18
Lower Caribou Stock	61
Marshall Lake	65
Mountdew Lake	21
Mulcahy	12
Nabish Lake	22
O'Sullivan Lake	66
Pike Lake	23
Pipestone Lake	15
Roaring River/Allely	44
Ruffo Lake East and West	43
Tib Lake	42
Toronto Lake	64
Wawa Subprovince	
Bulldozer	54
Burchell Lake - Upper Shebandowan Lake	36
Haines Gabbro - South Shebandowan area	37
Moshkinabi	55
Musher Lake Pluton	50
Pelletier	76
Shabotik	53
Sun Rise Lake area	75
White Lake	51
White River Intrusion	52

Intrusion Number	OTH-001	**Intrusion Name**	Pipestone Bay					
Township/Area	Ball	**Resident Geologist District**	Red Lake					
Property Name		**Access**	Boat					
Location Description	NW end of Red Lake, 46.7 km WNW of Balmertown							
Geological Setting	Synvolcanic							
Intrusion Age/Era	Post 2940 +/-2 Ma and 2925 +/-3 Ma (age of hosting Ball assemblage metavolcanic rocks)[1]							
Geophysical Surveys								
Recent mapping	OGS Maps 2175[2], 2265[3], P.3223[4]							
Morphology	Elongate sill							
Size of Intrusion	6.5 km long by 1.5 km wide							
Lithologies Present	Serpentinite, serpentinized pyroxenite, peridotite, and minor gabbro							
Distribution of Lithologies	Ultramafic > Mafic							
Metamorphic grade	Upper greenschist to amphiboliite							
Alteration	Strong to intense calcite alteration[1]							
Structure-Texture	E-W foliation[3]							
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Felsic and mafic metavolcanics of the Ball Assemblage							
Nature of contact	Intrusive							
Material analyzed	Grab sample	**Sample Distribution**	23 samples around Pipestone Bay, Red Lake					
Geochemical Characteristics: Please refer to figures 2, 3 and 4.								
Chemical affinity	Tholeitic? Limited trace element data suggests MORB-like source							
Sulphide (S) saturation	S-undersaturated							
Pd/Pt ratios	**Range**	0.89-1.29	**Median**	1.25	**Average**	1.14	**Number of Samples**	3
Pt + Pd (ppb)	**Range**	0.5-34.3	**Median**	1.1	**Average**	5.6	**Number of Samples**	11
Ni/Cu ratios	**Range**	0.08-890.67	**Median**	293.33	**Average**	322.84	**Number of Samples**	11
Total Ni (ppm)	**Range**	39-2923	**Median**	2057	**Average**	1922	**Number of Samples**	23
Total Cu (ppm)	**Range**	3-499	**Median**	7	**Average**	60	**Number of Samples**	11
Total sulphur (wt %)	**Range**	0.01-0.22	**Median**	0.02	**Average**	0.04	**Number of Samples**	12
Anomalies	Two anomalous samples, remainder at or below detection							
Hypothetical Source Region	Depleted mantle based on limited data							
Tectonic Setting	Rifted arc							
Mineralization Type	Unknown							
Potential for exploration	2 (Moderate sized intrusion, good lithologies, low PGE values)							

MISCELLANEOUS NOTES:

Pipestone Bay is located at the northwest end of Red Lake, 46.7 km WNW of Balmertown, in Ball Township. Ultramafic to mafic rocks in the area form a large composite intrusion approximately 6.5 km long and 1.5 km wide, most of which is covered by Pipestone Bay. Lithologies include serpentinite, serpentinized pyroxenite, peridotite, and minor gabbro. The occurrence of gabbro is limited to the northwestern part of Pipestone Bay in east-west trending sill-like bodies roughly parallel to and outcropping along Biron Bay and an adjacent peninsula. Outcrops along the eastern and southeastern shores of Pipestone Bay display strong to intense pervasive carbonate alteration[1]. The body intrudes mafic to felsic metavolcanics of the Ball assemblage.

REFERENCES:

[1] Parker, J.R. 2000. Gold mineralization and wall rock alteration in the Red Lake greenstone belt: a regional perspective; *in* Summary of Field Work and Other Activities 2000, Ontario Geological Survey, Open File Report 6032, p.22-1 to 22-27.

[2] Ferguson, S.A., Davies, J.C., Brown, D.D. and Pryslak, A.D. 1970. Red Lake-Birch Lake Sheet, Geological Compilation Series, Kenora District; Ontario Geological Survey, Map 2175, scale 1:253 440.

[3] Riley, R.A. 1975. Ball Township, Kenora District; Ontario Division of Mines, Map 2265, scale 1:12 000.

[4] Stone, D., Atkinson, B.T. and Fogal, R. 1993. Precambrian geology, Pipestone Bay; Ontario Geological Survey, Preliminary Map P.3223, scale 1:50 000.

[5] Parker, J.R. 2000. Nickel-Copper-Platinum Group Element Sulphide Mineralization in the Red Lake Greenstone Belt: A Preliminary Report; *in* Summary of Field Work and Other Activities 2000, Ontario Geological Survey, Open File Report 6032, p.23-1 to 23-14.

Intrusion Number	OTH-002	**Intrusion Name**	Trout Bay					
Township/Area	Mulcahy	**Resident Geologist District**	Red Lake					
Location Description	47.6 km W of Balmertown							
Property Name	Trout Bay, Goldcorp Inc.	**Access**	Road, boat					
Geological Setting	Synvolcanic. Komatiitic basalt							
Intrusion Age/Era								
Geophysical Surveys								
Recent mapping	OGS Maps 2175[1], 2295[2]							
Morphology	2 parallel, oblong to arcuate-shaped bodies that strike NW-SE (the bodies consist of a series of semi-conformable to conformable composite gabbro sills that intrude the surrounding host rocks)							
Size of Intrusion	Northeasternmost body 5 to 5.5 km long, 300 m at widest point. Southernmost body 5.5 to 6 km long, 1.6 km at widest point.							
Lithologies Present	Gabbro, pyroxenite, norite							
Distribution of Lithologies	Ultramafic < Mafic							
Metamorphic grade	Greenschist to lower amphibolite							
Alteration	Weak to pervasive chlorite, carbonate, epidote, serpentine and talc alteration							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Metavolcanic and metasedimentary rocks of the Ball and Trout Bay assemblages							
Nature of contact	Unclear							
Material analyzed	Grab samples*	**Sample Distribution**	15 samples					
Geochemical Characteristics: Please refer to figures 2, 3 and 4.								
Chemical affinity	Komatiitic basalt?							
Sulphide (S) saturation	S-undersaturated?							
Pd/Pt ratios	**Range**	0.60-137.19	**Median**	0.99	**Average**	11.20	**Number of Samples**	15
Pt + Pd (ppb)	**Range**	2.0-3422.5	**Median**	13.8	**Average**	296.3	**Number of Samples**	15
Ni/Cu ratios	**Range**	0.82-34.86	**Median**	2.24	**Average**	6.00	**Number of Samples**	15
Total Ni (ppm)	**Range**	33-26067	**Median**	244	**Average**	2470	**Number of Samples**	15
Total Cu (ppm)	**Range**	7-13095	**Median**	94	**Average**	1075	**Number of Samples**	15
Total sulphur (wt %)	**Range**	0.01-18.30	**Median**	0.06	**Average**	1.81	**Number of Samples**	15
Anomalies	Up to 3.4 g/t Pd+Pt in iron formation, associated with high Ni and Co (this study)							
Hypothetical Source Region	Depleted mantle?							
Tectonic Setting	Rifted arc – plume related?							
Mineralization Type	Type VIa and/or V							
Potential for exploration	4 (high PGE grades, more work required) – excellent potential for Ni							

*Access to property by Goldcorp Inc.

MISCELLANEOUS NOTES:

The following descriptive summary is based on mapping and reports by Atkinson et al. (1990)[2], Riley (1976)[3], Parker (2000)[4], and Shklanka (1969)[5].

The Trout Bay – Fahlgren Lake area is located on the western end of Red Lake in Ball and Mulcahy Townships approximately 47.6 km west of Balmertown. Mafic to ultramafic intrusive rocks in the area consist of two parallel, oblong to arcuate-shaped bodies that strike northwest-southeast. The northeasternmost body is approximately 5 to 5.5 km long by 300 m at its widest point and the southernmost body extends over a length of approximately 9 km with a maximum width of 1.6 km. Each of the bodies is composed of a series of semi-conformable to conformable composite sills that intrude the surrounding metavolcanic and metasedimentary host rocks. Gabbro and porphyritic gabbro are dominant lithologies with local pyroxenite, norite, and micro-pegmatitic gabbro phases.

Copper-nickel, PGE, chromite, zinc, and silver mineralization is associated with the disseminated sulphides hosted by the gabbro sills and by the metasediments, which the gabbros intrude. The highest grade and most abundant zinc mineralization, the *zinc pit zone*, is associated with silicified argillaceous greywackes and recrystallized, siliceous metasediments at the contact with a thick gabbro sill. The *zinc pit zone* is divided into east and west mineralized sections: West Zone: 13 776 tons 4.75% Zn, 0.68% Cu, 0.94 oz/ton Ag; East Zone: 124 760 tons 7.80% Zn, 1.5% Cu, 0.24% Pb, 0.007 oz/ton Ag. Copper-nickel mineralization hosted by the gabbro sills is typically associated with or proximal to contacts with the surrounding metasedimentary rocks. The frog pit Cu-Ni zone occurs at the pyroxenitic base of a composite gabbro sill at or near the contact with a chert-magnetite facies iron formation. The mineralized zone is 400 feet long by maximum 30 feet wide with approximate grades of 0.5% Ni and 0.25% Cu. Talc-serpentine-tremolite-actinolite alteration is common proximal to the mineralization.

REFERENCES:

[1]Ferguson, S.A., Davies, J.C., Brown, D.D. and Pryslak, A.D. 1970. Red Lake Birch Lake Sheet, Geological Compilation Series, Kenora District; Ontario Geological Survey, Map 2175, scale 1:253 440.

[2]Riley, R.A. 1976. Mulcahy Township, Kenora District, Ontario; Ontario Department of Mines, Map 2295, scale 1:12 000.

[3]Atkinson, B.T., Parker, J.R. and Storey, C.C. 1990. Red Lake Resident Geologist's District - 1989; in Report of Activities 1991, Resident Geologists, Ontario Geological Survey, Miscellaneous Paper 147, p.63-65.

[4]Parker, J.R. 2000. Nickel-Copper-Platinum Group Element Sulphide Mineralization in the Red Lake Greenstone Belt: A Preliminary Report; in Summary of Field Work and Other Activities 2000, Ontario Geological Survey, Open File Report 6032, p.23-1 to 23-14.

[5]Shklanka, R. 1969. Copper, nickel, lead and zinc deposits of Ontario; Ontario Department of Mines, Mineral Resources Circular 12, p.154-155.

OTHER REFERENCES:

Kurylow, C.J. 1963. The geology of the Trout Bay nickel deposit, Red Lake District, northwestern Ontario; unpublished MSc thesis, University of Manitoba, Winnipeg, Manitoba, 108p.

Stone, D., Atkinson, B.T. and Fogal, R. 1993. Precambrian geology, Pipestone Bay; Ontario Geological Survey, Preliminary Map P.3223, scale 1:50 000.

Intrusion Number	OTH 003	**Intrusion Name**	Golden Arm
Township/Area	Todd	**Resident Geologist District**	Red Lake
Location Description	West Red Lake		
Property Name		**Access**	Boat
Geological Setting	Synvolcanic intrusion		
Intrusion Age/Era			
Geophysical Surveys			
Recent mapping	OGS Maps 2175[1], 2406[2]		
Morphology	Elongate - parallels Golden Arm Bay - irregular sill-like bodies (mafic-ultramafic) that are intimately associated with medium to coarse-grained gabbro		
Size of Intrusion	4.5 km by 1.75 km		
Lithologies Present	Gabbro, peridotite, pyroxenite, serpentinite		
Distribution of Lithologies	Ultramafic > Mafic		
Metamorphic grade	Amphibolite		
Alteration	Moderate to pervasive serpentine, talc, tremolite-actinolite alteration and chlorite alteration		
Structure-Texture			
Magma Dynamics			
Characteristic Mineralogy			
Crystallization Sequence			
Host rock	Felsic metavolcanic rocks of the Ball assemblage, mafic metavolcanic rocks of the Balmer assemblage		
Nature of contact	Intrusive		
Material analyzed	Grab sample	**Sample Distribution**	20 samples

Geochemical Characteristics: Please refer to figures 2, 3 and 4.

Chemical affinity	Tholeiitic to komatiitic basalt							
Sulphide (S) saturation	S-saturated and S-undersaturated							
Pd/Pt ratios	**Range**	0.40-1.65	**Median**	1.29	**Average**	1.18	**Number of Samples**	16
Pt + Pd (ppb)	**Range**	0.54-29.03	**Median**	6.8	**Average**	8.2	**Number of Samples**	19
Ni/Cu ratios	**Range**	1.20-632.00	**Median**	32.83	**Average**	83.11	**Number of Samples**	20
Total Ni (ppm)	**Range**	190-4590	**Median**	1581	**Average**	1643	**Number of Samples**	20
Total Cu (ppm)	**Range**	3-265	**Median**	56	**Average**	71	**Number of Samples**	20
Total sulphur (wt %)	**Range**	0.01-0.48	**Median**	0.02	**Average**	0.06	**Number of Samples**	18

Anomalies	Mildly anomalous. Most PGE numbers < 10 ppb Pt+Pd
Hypothetical Source Region	Depleted mantle (based on Ti, Zr and Y ratios)
Tectonic Setting	Rifted arc
Mineralization Type	Unknown
Potential for exploration	2+ (moderate size, low PGE values, requires more work)

MISCELLANEOUS NOTES:

Golden Arm is centered approximately 22 km west northwest of the town of Red Lake. Mafic to ultramafic rocks that outcrop along the shores and area surrounding Golden Arm form at least one or more composite intrusive bodies covering an area 4.5 to 5 km long by up to 1.75 km wide. Lithologies present include serpentinite, serpentinized pyroxenite, peridotite, gabbro, and porphyritic gabbro. Continuous to discontinuous areas of individual lithologies define map-scale compositional layering trending northeast. The apparent thickness of the intrusion as well as repetitive layering could be in part due to structural duplication as a northeast trending synclinal axis is interpreted subparallel to the elongation of the intrusion[1]. Several pyrite, chalcopyrite, and pyrrhotite occurrences are noted by Riley[2] associated mainly with the more gabbroic parts of the intrusion. Mafic to ultramafic intrusions in the Golden Arm area intrude mafic, intermediate, and felsic metavolcanics of the Ball assemblage (Corfu and Wallace, 1986)[3].

REFERENCES:

[1] Ferguson, S.A., Davies, J.C., Brown, D.D. and Pryslak, A.P. 1970. Red Lake-Birch Lake Sheet, Geological Compilation Series, Kenora District; Ontario Geological Survey, Map 2175, scale 1:253 440.

[2] Riley, R.A. 1978. Todd Township, Kenora District, Ontario; Ontario Geological Survey, Map 2406, scale 1:12 000.

[3] Corfu, F. and Wallace, H. 1986. U-Pb zircon ages for magmatism in the Red Lake greenstone belt, northwestern Ontario; Canadian Journal of Earth Sciences, v.23, p.27-42.

OTHER REFERENCES:

Stone, D., Atkinson, B.T. and Fogal, R. 1993. Precambrian geology, Pipestone Bay; Ontario Geological Survey, Preliminary Map P.3223, scale 1:50 000.

Intrusion Number	OTH-004			**Intrusion Name**	Hammel Lake			
Township/Area	Fairlie			**Resident Geologist District**	Red Lake			
Location Description								
Property Name							**Access**	Road
Geological Setting	Syn- to post-tectonic							
Intrusion Age/Era	Post 2717 Ma[1] (age of the host rocks of the Hammel Lake Batholith)							
Geophysical Surveys								
Recent mapping	OGS Maps 2175[2], 2407[3]							
Morphology	Subrounded							
Size of Intrusion	1.85 km by 850 m							
Lithologies Present	Anorthositic olivine gabbro, anorthositic hornblende gabbro, anorthositic biotite diorite							
Stratigraphic Sequence								
Metamorphic grade	Amphibolite							
Alteration	Weak to pervasive sericite, chlorite and tremolite/actinolite alteration							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Hammel Lake Batholith/Hammel Lake Pluton							
Nature of contact	Intrusive							
Material analyzed	Grab sample		**Sample Distribution**	10 samples				
Geochemical Characteristics: Please refer to figures 2, 3 and 4.								
Chemical affinity	Calc-alkaline							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	0.71-1.89	**Median**	1.33	**Average**	1.32	**Number of Samples**	6
Pt + Pd (ppb)	**Range**	0.71-7.16	**Median**	2.5	**Average**	2.8	**Number of Samples**	9
Ni/Cu ratios	**Range**	0.35-9.09	**Median**	1.29	**Average**	2.37	**Number of Samples**	10
Total Ni (ppm)	**Range**	18-209	**Median**	95	**Average**	99	**Number of Samples**	10
Total Cu (ppm)	**Range**	21-120	**Median**	54	**Average**	59	**Number of Samples**	10
Total sulphur (wt %)	**Range**	0.01-0.25	**Median**	0.01	**Average**	0.06	**Number of Samples**	7
Anomalies	None							
Hypothetical Source Region	Metasomatized source							
Tectonic Setting	Mature convergent margin							
Mineralization Type	Unknown							
Potential for exploration	1 (low PGE values, small intrusion)							

MISCELLANEOUS NOTES:

The summary description that follows is based on Muir (1972)[4].

The Hammel Lake anorthositic gabbro complex is located approximately 14 km NW from the town of Red Lake. The intrusion is approximately 1.85 km long by 850 m wide and occupies approximately 0.4 square miles. Three main rock types containing 50 to 65% anorthositic plagioclase occur within the complex: anorthositic olivine gabbro, anorthositic hornblende gabbro, and anorthositic biotite diorite. Moderate to intense saussurite alteration is typical near contact margins and partially rims the complex on its north-central, south-central, and southeast margins. The Hammel Lake anorthositic complex is interpreted as a possible marginal phase associated with the Hammel Lake Batholith[3].

REFERENCES:

[1] McMaster, N.D. 1987. A preliminary ^{40}Ar/^{39}Ar study of the thermal history and age of gold in the Red Lake greenstone belt; unpublished MSc. thesis, University of Toronto, Toronto, Ontario.

[2] Ferguson, S.A., Davies, J.C., Brown, D.D. and Pryslak, A.D. 1970. Red Lake-Birch Lake Sheet, Geological Compilation Series, Kenora District; Ontario Geological Survey, Map 2175, scale 1:253 440.

[3] Riley, R.A. 1978. Fairlie Township, Kenora District; Ontario Geological Survey, Map 2407, scale 1:12 000.

[4] Muir, T.L. 1972. Petrographic study of the Hammel Lake anorthositic gabbro complex; unpublished BSc thesis, Queen's University, Kingston, Ontario, 69p.

OTHER REFERENCES:

Atkinson, B.T. and Stone, D. 1993. Precambrian geology, Red Lake area; Ontario Geological Survey, Preliminary Map P.3227, scale 1:50 000.

Stone, D., Atkinson, B.T. and Fogal, R. 1993. Precambrian geology, Pipestone Bay; Ontario Geological Survey, Preliminary Map P.3223, scale 1:50 000.

Intrusion Number	OTH-005	**Intrusion Name**	Pure Gold Gabbro
Township/Area	McDonough	**Resident Geologist District**	Red Lake
Location Description	15 km N of Red Lake		
Property Name		**Access**	Road
Geological Setting	Syntectonic intrusion		
Intrusion Age/Era	Archean		
Geophysical Surveys			
Recent mapping	OGS Maps 2175[1], P.3227[2]		
Morphology	Elongate sill		
Size of Intrusion	Up to 9 km in strike length from geophysics		
Lithologies Present	Mesogabbro, leucogabbro, quartz diorite		
Distribution of lithologies	Mafic		
Metamorphic grade	Amphibolite		
Alteration	Weak to intermediate sericite, epidote and actinolite/tremolite alteration		
Structure-Texture			
Magma Dynamics			
Characteristic Mineralogy			
Crystallization Sequence			
Host rocks	Mafic and felsic metavolcanic rocks of the Balmer assemblage[3]		
Nature of contact	Intrusive		
Material analyzed	Grab sample	**Sample Distribution**	4 samples

Geochemical Characteristics: Please refer to figures 2, 3 and 4.

Chemical affinity	Tholeiitic.							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	0.73	**Median**	0.73	**Average**	0.73	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	0.8-8.1	**Median**	1.0	**Average**	3.3	**Number of Samples**	3
Ni/Cu ratios	**Range**	0.29-3.67	**Median**	0.62	**Average**	1.30	**Number of Samples**	4
Total Ni (ppm)	**Range**	12-67	**Median**	23	**Average**	31	**Number of Samples**	4
Total Cu (ppm)	**Range**	9-75	**Median**	40	**Average**	41	**Number of Samples**	4
Total sulphur (wt %)	**Range**	0.01-0.41	**Median**	0.06	**Average**	0.13	**Number of Samples**	4

Anomalies	None
Hypothetical Source Region	Enriched mantle or contaminated based on limited Zr, Ti and Y data
Tectonic Setting	Rifted arc
Mineralization Type	Type I or II (more information required)
Potential for exploration	1 (S-saturated, low PGE values, more work required)

MISCELLANEOUS NOTES:

The Pure Gold Gabbro (Lichtblau, 2001)[4] refers to a poorly exposed gabbro body centered approximately 15 km north of the town of Red Lake. Ground magnetic surveys have defined a strike length of 9 km for the intrusive body. Reported mineralization from a 1987 drill hole on the western portion of the gabbro indicated an intersection of over 200 meters of disseminated chalcopyrite, pyrrhotite and pyrite. Assays of this core by Aurora Platinum Corporation (McDonough Property) show that this mineralization is anomalous in platinum and palladium (no grades reported).

REFERENCES:

[1] Ferguson, S.A., Davies, J.C., Brown, D.D. and Pryslak, A.D. 1970. Red Lake-Birch Lake Sheet, Geological Compilation Series, Kenora District; Ontario Geological Survey, Map 2175, scale 1:253 440.

[2] Atkinson, B.T. and Stone, D. 1993. Precambrian geology, Red Lake area; Ontario Geological Survey, Preliminary Map P.3227, scale 1:50 000.

[3] Parker, J.R. 2000. Project unit 98-002. Nickel-copper-platinum group element sulphide mineralization in the Red Lake greenstone belt: a preliminary report; *in* Summary of Field Work and Other Activities 2000, Ontario Geological Survey, Open File Report 6032, p.23-1 to 23-14.

[4] A. Lichtblau, personal communication, 2001.

OTHER REFERENCES:

Plewes, G.H. and Paterson, J.G. 2000. Option agreement signed on Redlake District Platinum/Palladium Property, Ontario, Aurora Platinum Corporation, http://www.auroraplatinum.com/: newsreleases.

Intrusion Number	OTH-006	**Intrusion Name**	Dome-McDonough-Bateman Property					
Township/Area	Dome-McDonough Bateman	**Resident Geologist District**	Red Lake					
Location Descrition	Eastern shoreline of Red Lake							
Property Name							**Access**	Road, boat
Geological Setting	Synvolcanic intrusion							
Intrusion Age/Era								
Geophysical Surveys								
Recent mapping	OGS Maps 2016[1], 2074[2], 2175[3], P.1240[4]							
Morphology	Two tongues of altered ultrabasic rock outcrop on northwest and southeast sides of Suffron Lake in the northeast corner of Dome Township. These dikes trend in a southwesterly direction and coalesce or unite to form part of the same intrusive body to the northeast in McDonough Township. The body extends along strike into southwestern Bateman Township.							
Size of Intrusion	The intrusion is approximately 8 km long, with dikes ranging in width 150-400 m							
Lithologies Present	Gabbro, hornblendite, serpentinite							
Distribution of Lithologies	Ultramafic < Mafic							
Metamorphic grade	Amphibolite							
Alteration	Moderate to pervasive chlorite, epidote and tremolite/actinolite alteration							
Structure-Texture	Medium-grained with abundant amphibole to fine-grained and strongly serpentinized[2].							
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Mafic and felsic metavolcanics of the Balmer assemblage[5]							
Nature of contact	Intrusive – inclusions of host rock noted within dikes by Ferguson (1966)[2].							
Material analyzed	Grab sample	**Sample Distribution**	8 samples					
Geochemical Characteristics: Please refer to figures 2, 3 and 4.								
Chemical affinity	Tholeiitic. MORB-like (from Ti, Zr and Y ratios)							
Sulphide (S) saturation	At or close to S-saturation							
Pd/Pt ratios	**Range**	0.64-0.94	**Median**	0.84	**Average**	0.82	**Number of Samples**	7
Pt + Pd (ppb)	**Range**	1.2-23.3	**Median**	18.9	**Average**	14.7	**Number of Samples**	8
Ni/Cu ratios	**Range**	0.25-35.67	**Median**	1.37	**Average**	5.45	**Number of Samples**	8
Total Ni (ppm)	**Range**	46-144	**Median**	115	**Average**	110	**Number of Samples**	8
Total Cu (ppm)	**Range**	3-187	**Median**	90	**Average**	101	**Number of Samples**	8
Total sulphur (wt %)	**Range**	0.01-0.22	**Median**	0.03	**Average**	0.06	**Number of Samples**	8
Anomalies	Mildly anomalous. High-moderate overall PGE values.							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Rifted arc							
Mineralization Type	Unknown							
Potential for exploration	3 (moderate size, high-moderate overall PGE values)							

MISCELLANEOUS NOTES:

REFERENCES:

[1] Ferguson, S.A. 1959. Bateman Township, southern part, District of Kenora, Ontario; Ontario Department of Mines, Map 2016, scale 1:12 000.

[2] Ferguson, S.A. 1966. Geology of Dome Township, District of Kenora, Ontario; Ontario Department of Mines, Geological Report 45 (includes Map 2074, scale 1:12 000).

[3] Ferguson, S.A., Davies, J.C., Brown, D.D. and Pryslak, A.D. 1970. Red Lake-Birch Lake Sheet, Geological Compilation Series, Kenora District; Ontario Geological Survey, Map 2175, scale 1:253 440.

[4] Pirie, J. and Sawitzky, E. 1977. McDonough Township, District of Kenora; Ontario Geological Survey, Preliminary Map P.1240, scale 1:12 000.

[5] Parker, J.R. 2000. Project unit 98-002. Nickel-copper-platinum group element sulphide mineralization in the Red Lake greenstone belt: a preliminary report; *in* Summary of Field Work and Other Activities 2000, Ontario Geological Survey, Open File Report 6032, p.23-1 to 23-14.

OTHER REFERENCES:

Atkinson, B.T. 1993. Precambrian geology, Dome Township; Ontario Geological Survey, Open File Map 213, scale 1:12 000.

Atkinson, B.T. and Stone, D. 1993. Precambrian geology, Red Lake area; Ontario Geological Survey, Preliminary Map P.3227, scale 1:50 000.

Berger, P.M. 1984. Structural geology of northern Dome and southern McDonough Townships, Red Lake, northwestern Ontario; unpublished MSc thesis, Queen's University, Kingston, Ontario, 99p.

Berger, P.M. and Summers, J. 1987. Structural geology of northern Dome and southern McDonough Townships, Red Lake area, northwest Ontario; Ontario Geological Survey, Open File Report 5637, 43p.

Chisholm, E.O. 1954. Geology of Balmer Township, Kenora District, Patricia Portion, Ontario; Ontario Department of Mines, Annual Report, 1951, v.60, pt.10, 62p. Includes Map 1951-3, scale 1:12 000.

Kita, J.H. 1978. Geology and genesis of the east shore of Hoyles Bay, Bateman and McDonough townships, Red Lake area, Ontario; unpublished BSc thesis, University of Toronto, Toronto, Ontario, 58p.

Pirie, J. and Grant, A. 1978. Bateman Township; Ontario Geological Survey, Preliminary Map P.1569A, scale 1:12 000.

Intrusion Number	OTH-007	**Intrusion Name**	Peterson Property
Township/Area	Balmer	**Resident Geologist District**	Red Lake
Location Description			
Property Name	Peterson Property	**Access**	Road
Geological Setting	Synvolcanic intrusion		
Intrusion Age/Era	Archean		
Geophysical Surveys			
Recent mapping	OGS Maps 2016[1], 2074[2], 2175[3], P.1240[4]		
Morphology	Sills?		
Size of Intrusion	Up to 300 m by 500 m		
Lithologies Present	Gabbro to diorite, peridotite		
Distribution of lithologies	Ultramafic < Mafic		
Metamorphic grade	Amphibolite		
Alteration	Intermediate to pervasive silica, sericite, carbonate, epidote and tremolite/actinolite alteration		
Structure-Texture			
Magma Dynamics			
Characteristic Mineralogy	Presence of Ni-Co arsenides in PGE-rich samples.		
Crystallization Sequence			
Host rocks	Iron formations and clastic metasediments		
Nature of contact	Intrusive		
Material analyzed	Grab and drill core*	**Sample Distribution**	13 samples

Geochemical Characteristics: Please refer to figures 2, 3 and 4.

Chemical affinity	Komatiitic basalt.							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.27-5.98	**Median**	1.22	**Average**	1.54	**Number of Samples**	10
Pt + Pd (ppb)	**Range**	6.4-1335.4	**Median**	14.0	**Average**	159.2	**Number of Samples**	10
Ni/Cu ratios	**Range**	0.16-51.21	**Median**	1.33	**Average**	7.33	**Number of Samples**	13
Total Ni (ppm)	**Range**	29-1788	**Median**	216	**Average**	640	**Number of Samples**	13
Total Cu (ppm)	**Range**	33-2161	**Median**	118	**Average**	335	**Number of Samples**	13
Total sulphur (wt %)	**Range**	0.01-12.10	**Median**	0.09	**Average**	1.53	**Number of Samples**	13

Anomalies	Up to 1.3 g/t Pd+Pt (this study)
Hypothetical Source Region	Depleted mantle
Tectonic Setting	Rifted arc
Mineralization Type	Type VIa and/or V
Potential for exploration	3 (high PGE numbers) – excellent potential for Ni mineralization

MISCELLANEOUS NOTES:

The Peterson Property of Rubicon Minerals Corporation is located in the Red Lake area, approximately 8 km east of Balmertown. Anomalous platinum and palladium values, reported in June 2000[5], are associated with and near the contact areas of mafic and ultramafic intrusive rocks with an extensive iron formation up to 150 m thick. The structurally deformed mafic to ultramafic bodies are significant in size (up to 300 m by 500 m) and are interpreted to underlie the iron formation. Mafic to felsic intrusive rocks cross cut both the iron formation and ultramafic and mafic intrusive bodies. The highest reported platinum and palladium values include 175 ppb and 1155 ppb, respectively, from the upper contact of a 0.91 m wide, fine-grained mafic dike, and 180 ppb and 256 ppb associated with the chert-magnetite iron formation.

*Access to property and core by Rubicon Minerals Corporation

REFERENCES:

[1] Ferguson, S.A. 1959. Bateman Township, southern part, District of Kenora, Ontario; Ontario Department of Mines, Map 2016, scale 1:12 000.

[2] Ferguson, S.A. 1966. Geology of Dome Township, District of Kenora, Ontario; Ontario Department of Mines, Geological Report 45 (includes Map 2074, scale 1:12 000).

[3] Ferguson, S.A., Davies, J.C., Brown, D.D. and Pryslak, A.D. 1970. Red Lake-Birch Lake Sheet, Geological Compilation Series, Kenora District; Ontario Geological Survey, Map 2175, scale 1:253 440.

[4] Pirie, J. and Sawitzky, E. 1977. McDonough Township, District of Kenora; Ontario Geological Survey, Preliminary Map P.1240, scale 1:12 000.

[5] MacVeigh, J.G. 2000. Anomalous platinum group mineralization in preliminary sampling at Peterson, Red Lake Ontario Project, Rubicon Minerals Corporation news release, Http://www.rubiconminerals.com/newsreleases.htm

Intrusion Number	OTH-008	**Intrusion Name**	Pakwash Lake					
Township/Area	Bruce Lake Area	**Resident Geologist District**	Red Lake					
Location Description	NE corner of Pakwash Lake, 20 km SSE of Balmertown							
Property Name							**Access**	Road
Geological Setting	Synvolcanic intrusion							
Intrusion Age/Era	Archean Shklanka[1] suggested a common parentage and contemporaneous age for the Pakwash Lake and Bruce Lake plutons based on mineralogical similarities and spatial relationships.							
Geophysical Surveys	Maps 60188 – 60190[2]							
Recent mapping	OGS Maps 2175[3], 2195[1]							
Morphology	Elliptical							
Size of Intrusion	~11 km by 5 km							
Lithologies Present	Quartz diorite, Diorite							
Distribution of Lithologies	Intermediate							
Metamorphic grade	Amphibolite							
Alteration	Weak to intermediate epidote							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Metasedimentary and metavolcanic rocks							
Nature of contact	Intrusive?							
Material analyzed	Grab sample			**Sample Distribution**	3 samples			
Geochemical Characteristics: Please refer to figures 2, 3 and 4.								
Chemical affinity	Calc-alkaline.							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	0.72	**Median**	0.72	**Average**	0.72	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	3.0	**Median**	3.0	**Average**	3.0	**Number of Samples**	1
Ni/Cu ratios	**Range**	2.98-9.50	**Median**	8.40	**Average**	6.96	**Number of Samples**	3
Total Ni (ppm)	**Range**	38-143	**Median**	42	**Average**	74	**Number of Samples**	3
Total Cu (ppm)	**Range**	4-48	**Median**	5	**Average**	19	**Number of Samples**	3
Total sulphur (wt %)	**Range**	0.01-0.02	**Median**	0.02	**Average**	0.02	**Number of Samples**	2
Anomalies	None							
Hypothetical Source Region	Metasomatized mantle							
Tectonic Setting	Convergent margin							
Mineralization Type	Unknown							
Potential for exploration	1 (low PGE values, magma too fractionated)							

MISCELLANEOUS NOTES:

The Pakwash Lake Pluton is located 20 km south-southeast of Balmertown and 15 km northwest of Ear Falls. The pluton forms a north-northeast oriented elliptical body approximately 7 miles long by 3 miles wide that underlies the northern part of Pakwash Lake. Lithologies present range from quartz diorite to diorite, with the latter more prevalent in the northern part of the intrusion. Alignment of amphibole grains define a prominent mineral lineation with orientations ranging from gentle to moderate angles plunging to the north-northeast in the northern part of the pluton, and orientations with moderate to steep angles plunging to the southeast in the southern part. Primary foliation is rarely developed and a poor secondary foliation is developed locally. Contacts of the pluton with the host rock are typically sharp and generally conformable with only some marked by slight feldspathization or a narrow injection zone. Shklanka[1] suggested a common parentage and contemporaneous age for the Pakwash Lake and Bruce Lake plutons based on mineralogical similarities and spatial relationships.

REFERENCES:

[1] Shklanka, R. 1970. Geology of the Bruce Lake Area, Kenora district, Patricia Portion, Ontario; Ontario Department of Mines, Geological Report 82 (includes Map 2195, scale 1:31 680).

[2] Ontario Geological Survey 2001. Airborne magnetic and electromagnetic surveys, Pakwash Lake area; Ontario Geological Survey, Maps 60188 to 60190, scale 1:50 000.

[3] Ferguson, S.A., Davies, J.C., Brown, D.D. and Pryslak, A.D. 1970. Red Lake-Birch Lake Sheet, Geological Compilation Series, Kenora District; Ontario Geological Survey, Map 2175, scale 1:253 440.

OTHER REFERENCES:

Breaks, F.W., Bond, W.D., Harris, N. and Westerman, C. 1975. Operation Kenora-Ear Falls, District of Kenora; *in* Summary of Field Work 1975, Ontario Division of Mines, Miscellaneous Paper 63, p.19-33.

Breaks, F.W., Bond, W.D. and Stone, D. 1978. Preliminary geological synthesis of the English River Subprovince, northwestern Ontario and its bearing upon mineral exploration; Ontario Geological Survey, Miscellaneous Paper 72, 55p.

Thurston, P.C. and Paktunc, D. 1985. Western Uchi Subprovince stratigraphy, (Trout Lake River area), Pakwash Lake sheet, District of Kenora (Patricia Portion); Ontario Geological Survey, Preliminary Map P.2858, scale 1:50 000.

Intrusion Number	OTH-009		**Intrusion Name**	Bruce Lake				
Township/Area	Bruce Lake Area		**Resident Geologist District**	Red Lake				
Location Description	North end of Bruce Lake							
Property Name							**Access**	Road
Geological Setting	Synvolcanic intrusion							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Maps 2175[1], 2195[2], P.2858[3]							
Morphology	Semicircular							
Size of Intrusion	6 km by 4.5 km[3]							
Lithologies Present	Metagabbro							
Distribution of Lithologies	Mafic							
Metamorphic grade	Amphibolite							
Alteration	Weak epidotization							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Metasedimentary and metavolcanic rocks							
Nature of contact	Intrusive							
Material analyzed	Grab sample		**Sample Distribution**	2 samples				
Geochemical Characteristics: Please refer to figures 2, 3 and 4.								
Chemical affinity	Tholeiitic, MORB-like (from Ti, Zr and T ratios)							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Pt + Pd (ppb)	**Range**	0.5	**Median**	0.5	**Average**	0.5	**Number of Samples**	1
Ni/Cu ratios	**Range**	0.41-1.11	**Median**	0.76	**Average**	0.76	**Number of Samples**	2
Total Ni (ppm)	**Range**	69-83	**Median**	76	**Average**	76	**Number of Samples**	2
Total Cu (ppm)	**Range**	62-204	**Median**	133	**Average**	133	**Number of Samples**	2
Total sulphur (wt %)	**Range**	0.05-0.12	**Median**	0.09	**Average**	0.09	**Number of Samples**	2
Anomalies	None							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Rifted arc							
Mineralization Type	Unknown							
Potential for exploration	1 (low PGE values, small intrusion)							

MISCELLANEOUS NOTES:

The descriptive summary that follows is based on Shklanka (1970)[2].

Metagabbro, hornblendite, and mafic to intermediate dikes form the mafic intrusive rocks in the Bruce Lake area, approximately 48 km south of Red Lake. Outcrop exposure is poor and metagabbro (Bruce Lake gabbro) is inferred to underlie most the area based on scattered outcrops, which correspond to an anomalous area of fairly uniform magnetic susceptibility. The gabbro is medium to dark grey, fine- to medium-grained and is composed of plagioclase and equal amounts of biotite and hornblende. Minor amounts of quartz are present and common accessory minerals consist of sphene, magnetite and zircon. Epidote occurs locally both as a minor and major phase.

Metagabbroic dikes that may be related to the poorly exposed Bruce Lake gabbro are also present in the north central portion of the Bruce Lake area. The metagabbro is dark grey to black in outcrop and is generally medium-grained with local coarse- and fine-grained facies. Blue-green amphibole is the dominant mineralogy with lesser amounts of plagioclase. Pyrrhotite, pyrite and quartz are present as minor phases and lesser amounts of secondary epidote and sericite are noted. Hornblendite, also present, resembles the metagabbro except that it is coarser grained and contains less plagioclase than the metagabbro. The hornblendite outcrops on the northern shore of Pakwash Lake where it is in intrusive contact with metasediments.

REFERENCES:

[1] Ferguson, S.A., Davies, J.C., Brown, D.D. and Pryslak, A.D. 1970. Red Lake-Birch Lake Sheet, Geological Compilation Series, Kenora District; Ontario Geological Survey, Map 2175, scale 1:253 440.

[2] Shklanka, R. 1970. Geology of the Bruce Lake Area, Kenora district, Patrica Portion, Ontario; Ontario Department of Mines, Geological Report 82 (includes Map 2195, scale 1:31 680).

[3] Thurston, P.C. and Paktunc, D. 1985. Western Uchi Subprovince stratigraphy, (Trout Lake River area), Pakwash Lake sheet, District of Kenora (Patricia Portion); Ontario Geological Survey, Preliminary Map P.2858, scale 1:50 000.

OTHER REFERENCES:

Breaks, F.W., Bond, W.D., Harris, N. and Westerman, C. 1975. Operation Kenora-Ear Falls, District of Kenora; *in* Summary of Field Work, 1975, Ontario Division of Mines, Miscellaneous Paper 63, p.19-33.

Breaks, F.W., Bond, W.D. and Stone, D. 1978. Preliminary geological synthesis of the English River Subprovince, northwestern Ontario and its bearing upon mineral exploration; Ontario Geological Survey, Miscellaneous Paper 72, 55p.

Intrusion Number	OTH-010		**Intrusion Name**	Snakeweed Lake				
Township/Area	W of Belanger		**Resident Geologist District**	Red Lake				
Location Description	50 km WSW of Red Lake							
Property Name						**Access**	Road	
Geological Setting	Syn-volcanic							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Maps 2175[1] and P.2858[2]							
Morphology	Irregular shape, elongate NW-SE			**Strike**		**Dip**		
Size of Intrusion	~14 km x ~3 km wide							
Lithologies Present	Massive to layered medium- to coarse-grained gabbro and melagabbro, vari-textured gabbro, pegmatitic pods, local pyroxenite, and polymictic intrusion breccias near contacts with the surrounding host rock							
Stratigraphic Sequence								
Metamorphic grade	Amphibolite							
Alteration	Weak to moderate sericitization and uralitization							
Structure-Texture				**Strike**		**Dip**		
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Felsic to mafic metavolcanic and metasedimentary rocks							
Nature of contact	Intrusive				**Strike**	**Dip**		
Material analyzed	Grab sample		**Sample Distribution**	5 samples				
Geochemical Characteristics: Please refer to figures 2, 3 and 4.								
Chemical affinity	High Fe-tholeiite. Ti, Zr and Y ratios indicate MORB-like source							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	1.76	**Median**	1.76	**Average**	1.76	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	0.9-2.1	**Median**	1.5	**Average**	1.5	**Number of Samples**	2
Ni/Cu ratios	**Range**	0.25-0.91	**Median**	0.48	**Average**	0.56	**Number of Samples**	5
Total Ni (ppm)	**Range**	31-134	**Median**	71	**Average**	80	**Number of Samples**	5
Total Cu (ppm)	**Range**	114-203	**Median**	143	**Average**	146	**Number of Samples**	5
Total sulphur (wt %)	**Range**	0.29-0.50	**Median**	0.30	**Average**	0.35	**Number of Samples**	5
Anomalies	None							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Rifted arc							
Mineralization Type	Unknown							
Potential for exploration	2 (large intrusion, low PGE values, more work required)							

MISCELLANEOUS NOTES:

The Snakeweed Lake intrusion is located approximately 50 km west-southwest of Red Lake and 37 km northeast of Ear Falls. The intrusion forms an irregular-shaped body with maximum length and width of approximately 11.5 km and 3.5 km, respectively. Size and morphology of the intrusion is defined mainly through geophysics as Pleistocene sand, gravel, and boulder deposits cover and obscure most of the area.

Sparse outcrops toward the southeast and central parts of the intrusion are highly variable consisting of massive to layered medium- to coarse-grained gabbro and melagabbro, varied-textured gabbro, pegmatitic pods, as well as local pyroxenite, and polymictic intrusion breccias near contacts with the surrounding host rock. Magnetite occurs in concentrations up to 10% as disseminations, veinlets and pods.

REFERENCES:

[1] Ferguson, S.A., Davies, J.C., Brown, D.D. and Pryslak, A.D. 1970. Red Lake-Birch Lake Sheet, Geological Compilation Series, Kenora District; Ontario Geological Survey, Map 2175, scale 1:253 440.

[2] Thurston, P.C. and Paktunc, D. 1985. Western Uchi Subprovince stratigraphy, (Trout Lake River area), Pakwash Lake sheet, District of Kenora (Patricia Portion); Ontario Geological Survey, Preliminary Map P.2858, scale 1:50 000.

OTHER REFERENCES:

Breaks, F.W., Bond, W.D., Harris, N. and Westerman, C. 1975. Operation Kenora-Ear Falls, District of Kenora; *in* Summary of Field Work, 1975, Ontario Division of Mines, Miscellaneous Paper 63, p.19-33.

Breaks, F.W., Bond, W.D. and Stone, D. 1978. Preliminary geological synthesis of the English River Subprovince, northwestern Ontario and its bearing upon mineral exploration; Ontario Geological Survey, Miscellaneous Paper 72, 55p.

Shklanka, R. 1970. Geology of the Bruce Lake Area, Kenora district, Patrica Portion, Ontario; Ontario Department of Mines, Geological Report 82, 27p.

Intrusion Number	OTH-011		**Intrusion Name**	Rex-Werner-Bug Lakes				
Township/Area	Rex Lake Area		**Resident Geologist District**	Kenora				
Location Description	80 km NNW of Kenora							
Property Name							**Access**	Road, trail, fly-in
Geological Setting	Unclear – intrusions are located within Rex-Werner-Bug fault system in the dominantly metasedimentary English River Subprovince							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Maps P.3371[1], P.3315[2], P.3317[2], P.3386[3] and 2175[4]							
Morphology	Small isolated bodies or lenses of olivine-orthopyroxene-chromite cumulates and associated discontinuous bodies of gabbro, porphyritic gabbro and anorthositic gabbro. Lenses and pods are aligned along regional faults and elongated parallel to the strike of the fault.							
Size of Intrusion	Ultramafic pods vary in size from 0.5 m to 180 m in length: largest pod (Gordon Lake Mine) in study area is 180 m x 45 m.							
Lithologies Present	Actinolite-tremolite-altered ultramafic rocks, biotite ultramafic rocks, orthopyroxene gabbro, leucogabbro, actinolite-tremolite-phlogopite-altered ultramafic rocks; amphibolite, chlorite-epidote amphibolite, antigorite-epidote-chlorite amphibolite, actinolite-tremolite-hercynite-altered ultramafic rocks, actinolite-tremolite-antigorite altered ultramafic rock, gabbro. No thin section data from this study.							
Distribution of Lithologies	Ultramafic < Mafic							
Metamorphic grade	Grade increases from amphibolite to dominantly granulite from west to east across the study area (within the metasedimentary migmatite assemblage).							
Alteration	Actinolite-tremolite alteration; actinolite-tremolite-hercynite alteration; actinolite-tremolite-antigorite alteration. Alteration of ultramafic rocks caused by addition of water and other volatiles resulting in 2 serpentinization events: first during initial cooling; second occurring at higher temperature after peak regional metamorphism.							
Structure-Texture					**Strike**		**Dip**	
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock								
Nature of contact	Intrusive				**Strike**		**Dip**	
Material analyzed	Grab sample		**Sample Distribution**	39 samples				
Geochemical Characteristics: Please refer to figures 2, 3 and 4.								
Chemical affinity	Tholeiitic.							
Sulphide saturation	S-saturated to S-undersaturated							
Pd/Pt ratios	**Range**	0.60-26.35	**Median**	3.23	**Average**	3.93	**Number of Samples**	31
Pt + Pd (ppb)	**Range**	0.8-1030.3	**Median**	33.1	**Average**	258.0	**Number of Samples**	37
Ni/Cu ratios	**Range**	0.01-4.02	**Median**	0.09	**Average**	0.95	**Number of Samples**	19
Total Ni (ppm)	**Range**	64-6000	**Median**	614	**Average**	1473	**Number of Samples**	22
Total Cu (ppm)	**Range**	185-98240	**Median**	3189	**Average**	11814	**Number of Samples**	25
Total sulphur (wt %)	**Range**	0.01-8.53	**Median**	1.43	**Average**	1.78	**Number of Samples**	39
Anomalies	Up to 1 g/t. Very high PGE values/grades in general.							
Hypothetical Source Region	Source unclear from trace element data							
Tectonic Setting	Unknown							
Mineralization Type	Type I and Type V							
Potential for exploration	4 (extremely high PGE values overall)							

MISCELLANEOUS NOTES:

Werner-Rex-Bug lakes area is located approximately 80 km north-northwest of Kenora. A number of economically important mafic to ultramafic intrusive bodies occur in this area, typically associated with the Werner-Rex lakes fault system. Several of the listed references provide good detailed descriptions of the regional geology, and occurrence and deposit-scale geology.

Previous geochemical analyses are available in Parker 1998.

REFERENCES:

[1] Beakhouse, G.P. 1997. Precambrian geology, Werner Lake-English River area; Ontario Geological Survey, Preliminary Map P.3371, scale 1:50 000.
[2] Parker, J.R. 1998. Geology of nickel-copper-chromite deposits and cobalt-copper deposits at Werner-Rex-Bug lakes, English River Subprovince, northwestern Ontario; Ontario Geological Survey, Open File Report 5975, 178p. Accompanied by Preliminary Maps P.3313, P.3314, P.3315, P.3316, P.3317, and P.3380.
[3] Stone, D., Hallé, J. and Chaloux, E. 1998. Precambrian geology, Pekagoning Lake area; Ontario Geological Survey, Preliminary Map P.3386, scale 1:50 000.
[4] Ferguson, S.A., Davies, J.C., Brown, D.D. and Pryslak, A.P. 1970. Red Lake-Birch Lake sheet, geological compilation series, Kenora district; Ontario Department of Mines, Map 2175, scale 1:253 440.

OTHER REFERENCES:

Atkinson, B.T., Parker, J.R., Koslowki, L. and Storey, C.C. 1992. Red Lake Resident Geologist's District - 1991, *in* Report of Activities 1991, Resident Geologists, Ontario Geological Survey, Miscellaneous Paper 158, p.29-57.

Beakhouse, G.P. 1994. Geology of the Rex Lake area; *in* Summary of Field Work and Other Activities 1994, Ontario Geological Survey, Miscellaneous Paper 163, p.78-80.

Beakhouse, G.P. 1993. Project Unit 92-03. Werner-Bug lakes area: base metal mineralization in a high-grade metasedimentary terrane; *in* Summary of Field Work and Other Activities 1993, Ontario Geological Survey, Miscellaneous Paper 162, p.62-67.

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Carlson, H.D. 1958. Geology of the Werner Lake-Rex Lake area; Ontario Division of Mines, Annual Report, v.66, pt.4, 30p. Accompanied by Maps 1957-02 and 1957-03.

Chown, E.H. 1955. A cobalt occurrence near Werner Lake, northwestern Ontario; unpublished BSc thesis, Queen's University, Kingston, Ontario, 28p.

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Geological Survey of Canada 1966. Aeromagnetic map, Bug Lake, District of Kenora, Ontario; Geological Survey of Canada, Map 3724G, scale 1:63 360.

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Intrusion Number	OTH-012	**Intrusion Name**	Mulcahy Gabbro		
Township/Area	Eagle Lake-Atikwa Batholith area	**Resident Geologist District**	Kenora		
Location Description	45 km SW of Dryden.				
Property Name		**Access**	Roads, trails, boat		
Geological Setting	Syntectonic in part coeval with Atikwa Batholith				
Intrusion Age/Era	2733 (+1.0/-0.9 Ma)				
Geophysical Surveys					
Recent mapping	OGS Map P.2826[7]				
Morphology	Sheet-like, tilted vertically to face northwest, subdivided into upper, middle and lower zones, each representing distinct pulses of magma[17]	**Strike**		**Dip**	
Size of Intrusion	Area: 60-63 sq. km; dimensions: irregular to elliptical in plan view (11 km x 7 km) with southwest elongated tail (7 km x 1 km)[7].				
Lithologies Present	Norite, orthopyroxenite, anorthosite, gabbronorite, peridotite, diorite, gabbro, olivine gabbronorite, leucogabbro, and alleged troctolite				
Distribution of Lithologies	Intermediate >> mafic >> ultramafic				
Stratigraphic Sequence					
Metamorphic grade	Lower to middle greenschist facies				
Alteration	Variable degree of alteration from weak to pervasive. Alteration types include chloritization, sericitization, epidotization and uralitization and replacement of ferromagnesian minerals by tremolite-actinolite				
Structure-Texture	Planar lamination, rhythmic and cryptic layering	**Strike**		**Dip**	
Magma Dynamics	Moderate				
Characteristic Mineralogy					
Crystallization Sequence					
Host rocks	Surrounded by granitoid rocks of the Atikwa Batholith except on its southwest margin where it is bordered by mafic metavolcanic and metasedimentary rocks of the Kakagi-Rowan Lakes greenstone belt				
Nature of contact	Intrusive		**Strike**		**Dip**
Material analysed	Grab samples	**Sample Distribution**	21 samples providing good coverage over east-central part of intrusion. Sample coverage over stratigraphic lower and middle zones. Fair to good outcrop exposure along roads and the shores of Mulcahy Lake.		

Geochemical Characteristics: Please refer to figures 5, 7 and 9.

Chemical affinity	High-Fe tholeiite. Zr/Y ratios suggest MORB-like source (more data required).							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	1.06-4.71	**Median**	2.88	**Average**	2.88	**Number of Samples**	2
Pt + Pd (ppb)	**Range**	0.8-3.4	**Median**	1.7	**Average**	1.7	**Number of Samples**	7
Ni/Cu ratios	**Range**	0.04-2.65	**Median**	1.13	**Average**	1.15	**Number of Samples**	20
Total Ni (ppm)	**Range**	3-254	**Median**	76	**Average**	87	**Number of Samples**	20
Total Cu (ppm)	**Range**	27-163	**Median**	93	**Average**	86	**Number of Samples**	21
Total sulphur (wt %)	**Range**	0.01-0.27	**Median**	0.08	**Average**	0.10	**Number of Samples**	21

Anomalies	None in this study. Values up to 155 ppb Pt+Pd in lower zone from press release, Atikwa Minerals Ltd.
Hypothetical Source Region	Depleted mantle? (more data required).
Tectonic Setting	Convergent margin
Mineralization Type	Possibly Type I
Potential for exploration	2 (large intrusion but low PGE values in general, appears to have lost PGE - potentially via S-saturation)

MISCELLANEOUS NOTES:

The Mulcahy gabbro is located immediately north of Beaverhouse Lake in the Populus Lake map area, and extends northeast towards Mulcahy Lake and Eagle Lake areas. This intrusion is pear-shaped in plan view, sheet like in the third dimension, and tilted vertically to face northwest. Mapping by Sutcliffe and Smith (1985) subdivided the Mulcahy gabbro into upper, middle and lower zones, each representing distinct pulses of magma. Dominant lithologies include: gabbro, gabbronorite, olivine gabbronorite, norite, leucogabbro, and anorthosite and their altered equivalents.

Locally, the intrusion is distinctly banded due to a variation in proportion of ferromagnesian minerals to plagioclase and is particularly evident near Mulcahy and Snare Lakes. Commonly magnetite is concentrated in the lower portion of the mafic layers. Within the primary bands, a gradation from norite to anorthosite is present. This body has previously been interpreted as both synclinal and funnel-shaped. However, the parallel nature, sharp contacts, consistent northeast orientation, and in the Mulcahy Lake area, the consistent gradation from melanocratic to leucocratic from southeast to northwest all suggest these layers were horizontally emplaced as a sheet and subsequently tilted into its vertical position. The precise determination of the structure is unknown since there is a lack of good outcrop exposure and/or a well-developed gradation within the bands throughout the intrusion. Apart from the gradation of mineralogy, other evidence for both crystal settling in the layered sequence and flow within the layers consists of cross-beds, truncated beds, cut and fill structures, slump folds and exotic rafted-in clasts.

Elongate bodies of dark brown, very coarse-grained peridotite are located along the southeast shore of Easter Chicken Lake and north of Alford and Marsh Lakes. The peridotite contains partially altered olivine and large poikilitic grains of brown hornblende, which is a secondary alteration product of pyroxene. Labradorite, magnetite and pyroxene are present in small amounts. This intrusion also contains discrete pods of magnetite that vary in length from a few cm to many metres. In the McKinstry and Eastern Chicken Lakes areas, granitic phases occur within the intrusion, and are speculated to represent granophyric differentiates near the top of the intrusion.

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Intrusion Number	OTB 012		**Intrusion Name**	Denmark Lake-Rupert Lake			
Township/Area	Rowan Lake area		**Resident Geologist District**	Kenora			
Location Description	73 km SE of Kenora, 32 km W of Sioux Narrows, East side of Caviar Lake, 8.8 km SW of Atikwa Lake						
Property Name	Not applicable					**Access**	Boat
Geological Setting	Syntectonic intrusion into metavolcanic rocks, metasediments along western contact and foliated granitoid rocks along eastern margin. Located within the Kakagi-Rowan Lakes greenstone belt						
Intrusion Age/Era	Possibly similar in age and character to other mafic to ultramafic intrusive bodies found discontinuously at the margin of the Atikwa Batholith such as the Mulcahy gabbro (2733 +1.0/-0.9 Ma), Nabish Lake gabbro, etc						
Geophysical Surveys							
Recent mapping	OGS Maps 2275, 2443						
Morphology	Irregular - elongate folded		**Strike**			**Dip**	
Size of Intrusion	~4 km x 5 km, ~20 sq. km						
Lithologies Present	Peridotite, gabbro, diorite						
Distribution of Lithologies	Ultramafic → Mafic						
Metamorphic grade	Greenschist						
Alteration	Intermediate to pervasive chloritization, carbonatization, epidotization and replacement of ferromagnesian minerals by tremolitic actinolite and replacement of plagioclase by clay minerals						
Structure/Texture			**Strike**			**Dip**	
Magma Dynamics							
Characteristic Mineralogy							
Crystallization Sequence							
Host rocks	Metavolcanic rocks, metasediments and foliated granitoids						
Nature of contact	Intrusive			**Strike**		**Dip**	
Material analysed	Grab sample		**Sample Distribution**	22			
Geochemical Characteristics: Please refer to figures 5, 7 and 9.							
Chemical affinity	Tholeiitic. Broadly, Zr/Y ratios suggest MORB-like source						
Sulphide saturation	Mostly S-saturated						
Pd/Pt ratio	**Range** 0.36-1.43	**Median** 0.60		**Average** 0.76		**Number of Samples**	12
Pt + Pd (ppb)	**Range** 0.9-118.1	**Median** 5.0		**Average** 16.7		**Number of Samples**	17
Ni/Cu ratio	**Range** 0.09-67.63	**Median** 1.29		**Average** 7.39		**Number of Samples**	22
Total Ni (ppm)	**Range** 11-1792	**Median** 192		**Average** 365		**Number of Samples**	22
Total Cu (ppm)	**Range** 6-5700	**Median** 69		**Average** 582		**Number of Samples**	22
Total sulphur (wt %)	**Range** 0.01-2.07	**Median** 0.08		**Average** 0.17		**Number of Samples**	24
Anomalies	Pt + Pd value of 118.1 ppb (moderate)						
Hypothetical Source Region	Depleted mantle						
Tectonic Setting	Mature convergent margin						
Mineralization Type	Type I in the southern section of the intrusion						
Potential for exploration	I (moderately high PGE values, known Ni-Cu-PGE mineralization)						

MISCELLANEOUS NOTES:

Note: the description of the Denmark Lake Complex that follows is summarized from Davies (1973).

The Denmark Lake Complex is one of several intrusive bodies in the area and is composed of peridotite, gabbro, diorite, quartz diorite and granodiorite, and contains remnants of metavolcanic rocks. The oldest rocks appear to be ultramafic, with gabbro, diorite, quartz diorite and granodiorite being successively younger. The common presence of angular fragments, general absence of preferred mineral orientation and a lack of obvious contact metamorphism effects suggest that the intrusion took place in a breccia zone, which allowed rapid heat loss. Peridotite and altered peridotite outcrop in several areas around Denmark Lake area: south of the western end of Denmark Lake, between the headlands on the northwest shore, on the largest island in the western part of the lake, at the south shore of the narrows and near the south shore of the eastern part of Denmark Lake. Drilling results have revealed the presence of serpentine under the eastern part of the lake and altered peridotite along the Lawrence River. The peridotite is weathered to a dark brown colour varying to purplish brown on oxide coated outcrops of highly altered peridotite. Original mineralogy of most of the peridotite rocks consists of olivine, clinopyroxene, orthopyroxene and minor amphibole and plagioclase. The ratio among these minerals and the degree of alteration is variable. Olivine is generally rounded ranging from 1 to 2 mm in diameter and is partly altered to serpentine and magnetite. Clinopyroxene is poikilitic in places and is partly altered to a patchy massive amphibole. Primary hornblende rims olivine in some rocks and is altered to hornblende and magnetite. Interstitial plagioclase is altered to sericite and clay.

Gabbro underlies most of the western portion of Denmark Lake and an area north of the narrows. As well, gabbro is present near the eastern part of Denmark Lake and the northernmost part of Rowan Lake where it has been cut up into "blocks" by a later intrusion composed of diorite, quartz diorite and granodiorite. Locally, finer grained gabbro is indistinguishable from the basalt with which it merges. Angular gabbroic fragments hosted within a gabbroic matrix of a slightly different colour are present in several outcrops. The original mineral assemblage of most gabbroic rocks consists of plagioclase, clinopyroxene and orthopyroxene with accessory magnetite and apatite. As well, primary brown amphibole occurs in some gabbros and olivine is present locally. Plagioclase ranges from An_{55} to An_{66} and is partially altered to sericite and epidote, and is chloritized along cracks. Clinopyroxene is partly altered to massive amphibole and orthopyroxene is altered to talc and magnetite. A pale blue green fibrous amphibole is most abundant within altered orthopyroxene crystals. Highly sheared gabbros are chloritized and epidotized.

The diorite and quartz diorite appear to be hybrid rocks and contain abundant inclusions of basalt and altered gabbro. The diorite consists of more feldspar than the gabbro and although most of it is younger than the gabbro, it is in part gradational with the gabbro. Likewise, the quartz diorite is younger than the gabbro but gabbro with interstitial quartz is difficult to distinguish from the quartz diorite. Granodiorite is most abundant in a zone extending along the southern edge of the [illegible] Lake Complex. The granodiorite weathers buff to grey and consists of abundant inclusions and schlieren. It is compositionally heterogeneous containing variable amounts of quartz (5 to 15%), biotite (5 to 20%) and hornblende (up to 20%). Locally, the granodiorite grades into quartz diorite.

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Intrusion Number	OTH-014		**Intrusion Name**	Kakagi Sills				
Location Description	76 km SE of Kenora, 75 km NNW of Fort Frances.							
Township/Area	Dogpaw-Kakagi-Katamiagamak Lakes area.		**Resident Geologist District**	Kenora				
Property Name						**Access**	Boat, road	
Geological Setting	Mafic and ultramafic rocks in the Kakagi Lake area intrude mafic to intermediate volcanic rocks of the Kakagi-Rowan Lakes greenstone belt (Kakagi Lake group) and consist of two possibly related types.[1] The first consists of relatively homogenous subvolcanic gabbro sills that occur as part of the mafic volcanic sequence mainly south of Kakagi Lake. The second type consists of heterogenous composite mafic to ultramafic bodies, which intrude all major rock types in the area. Both types of sills are thought to be roughly synchronous with mafic volcanism of the greenstone belt into which they intrude. The first type of gabbro occurs as a predominantly east-west trending group of sills, 0.6 m to 600 m thick both south of Kakagi Lake and north of Katimiagamak Lake (south Kakagi/Katimiagamak sills). The gabbro both intrudes and is interbedded and gradational along strike with the surrounding mafic volcanic rocks. The sills continue to extend in a southeast direction in the area of and south of Katimiagamak Lake toward Pipestone Lake[2]. The second type of mafic to ultramafic intrusive rock occurs in the area extending north from the north shore of Kakagi Lake to the area surrounding Cedartree Lake[3,4]. It consists of a sequence of east-southeast to northeast trending composite (differentiated), 150 to 600 m thick sills that intrudes dominantly intermediate volcanic rocks of the Kakagi-Rowan Lakes greenstone belt. Lithologies within the sequence of sills include medium-grained peridotite, pyroxenite, gabbro, and leucocratic gabbro. Contacts between sill lithologies are typically not sharply defined with gradational changes in composition over distances of 60 to 120 m. Field evidence indicates that sill composition is controlled by both thickness of the body and proximity to contact zones, suggesting contamination as a major determining factor of composition[1]. Five of these differentiated sills were noted in the Kakagi-Cedartree Lakes area[4].							
Intrusion Age/Era	2728±2 Ma (North Kakagi) and 2732 (+4/-3) South Kakagi (Katimiagamak Lake Sills).[5]							
Geophysical Surveys	Maps 60 087, 60 088 and 60 089[6], 1168G[7], Data Set 1208[8]							
Recent mapping	OGS Maps 2447[1], 2430[2], 2319[4], 42b[9], 2443[10]							
Morphology	Sills		**Strike**			**Dip**		
Size of Intrusion	Five main sills were observed: Sill 1, south of Dogpaw Lake, through Emm Bay and Peninsula Bay of Kakagi Lake is up to 35 km long and varies from 760 m to 1370 m in thickness; Sill 2, located in the Cedartree Lake-Wicks Lake area is approximately 12 km long and ranges from 305 to 760 m thick (this sill may also be connected to another 10-12 km long sill trending east-northeast through the center of Kakagi Lake); Sill 3, located east of Cedartree Lake and to northwest of Wicks Lake, is approximately 13-16 km long and ranges from 490 m to 1005 m thick; Sill 4, located west and south of Little Stephen Lake, is approximately 4 km long and ranges from 60 m to 150 m in thickness and is interpreted to be a concordant offshoot of Sill 3; Sill 5, located south of Stephen Lake is approximately 2.5 km long and 490 m thick.[3,4]							
Lithologies Present	Peridotite, pyroxenite, gabbro, leucocratic gabbro, quartz-gabbro and minor quartz-diorite.[1] Lithologies observed during this study in order of decreasing abundance include gabbro, pyroxenite, plagioclase-bearing pyroxenite to melagabbro, hornblende-gabbro, leucogabbro, harzburgite, lherzolite, and quartz-gabbro to quartz-diorite.							
Distribution of Lithologies	Mafic>/=ultramafic							
Stratigraphic Sequence	Basal layers of pyroxenite and/or peridotite overlain by gabbro to leucogabbro or diorite.							
Metamorphic grade	Mid- to upper greenschist facies. Plagioclase is weakly to moderately replaced by sericite±saussurite, and pyroxene and hornblende are weakly to moderately replaced by actinolite±chlorite.							
Alteration	Local patchy to pervasive carbonate alteration, and local intermediate to intense vein-controlled carbonate alteration. Moderate to intense pervasive serpentinization of peridotite.							
Structure-Texture	The sills are affected by one event of major folding, and locally by several major and minor faults and shear zones[4]. Overall, the sills are typically undeformed and locally moderately to strongly foliated. Examples of gabbro from the sills are typically medium-grained equigranular with ophitic textures common. Pyroxenite is typically medium- to coarse-grained equigranular with common cumulate and ophitic to poikilitic textures. Peridotites are typically fine- to medium-grained and display mesocumulate to orthocumulate textures.							
Magma Dynamics	Low							
Characteristic Mineralogy	Plagioclase, clinopyroxene, hornblende, actinolite, orthopyroxene, olivine, serpentine.							
Crystallization Sequence	Olivine-orthopyroxene-clinopyroxene-plagioclase.							
Host rocks	Mafic to intermediate volcanic rocks.							
Nature of contact	Intrusive				**Strike**		**Dip**	
Material analyzed	Grab samples		**Sample Distribution**	61 samples from shores of and surrounding Kakagi Lake to southwest, west and north.				
Geochemical Characteristics: Please refer to figures 5, 7 and 9.								
Chemical affinity	Tholeiitic. Ti, Zr and Y ratios indicate MORB-like magma.							
Sulphide saturation	S-saturated and S-undersaturated							
Pd/Pt ratios	**Range**	0.22-1.95	**Median**	0.95	**Average**	0.96	**Number of Samples**	51
Pt + Pd (ppb)	**Range**	0.71-116.04	**Median**	8.0	**Average**	12.2	**Number of Samples**	55
Ni/Cu ratios	**Range**	0.11-65.38	**Median**	4.53	**Average**	8.19	**Number of Samples**	59
Total Ni (ppm)	**Range**	6-888	**Median**	163	**Average**	243	**Number of Samples**	59

Total Cu (ppm)	**Range**	4-263	**Median**	44	**Average**	52	**Number of Samples**	60
Total sulphur (wt %)	**Range**	0.01-0.15	**Median**	0.02	**Average**	0.03	**Number of Samples**	45
Anomalies	Anomalous Pt + Pd value of 116.04 ppb from visibly unmineralized gabbro to quartz-gabbro sample along Highway 71.							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Convergent margin							
Mineralization Type	Unknown							
Potential for exploration	3-4 (Excellent overall PGE values, moderate intrusion size)							

MISCELLANEOUS NOTES:

These intrusions have been well studied with many good detailed maps, descriptions, theses etc. available (see reference lists below).

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Intrusion Number	OTH-015	**Intrusion Name**	Pipestone Lake					
Location descritipn	50 km NNW of Fort Francis, 23 km E of Nestor Falls							
Township/Area	Dash Lake-Pipestone Lake area, McLarty and Godson Townships	**Resident Geologist District**	Kenora					
Property Name		**Access**	Boat					
Geological Setting	Synvolcanic intrusion. Mafic and ultramafic sills in the Pipestone Lake area intrude mafic metavolcanic and metasedimentary rocks of the Katimiagamak group of the Kakagi-Rowan Lakes Greenstone Belt[1]. The sills are described as a suite of composite mafic intrusive sheets that contain two main types of contemporaneous and possibly cosanguineous gabbro. Contacts between the two gabbro types, magnetite-quartz-amphibole gabbro and leucocratic gabbro, are described as vague with hybrid types of gabbro not uncommon[2]. Sills in the Pipestone Lake area have also been linked with those on and around Kakagi Lake due to their continuous nature[2]. The sills form a crude Y-shape in map view. The west arm of the Y wraps around part of the Sabaskong Batholith and extends through Bethune and Hornberg Lakes toward the south Kakagi Lake area (Katimiagamak Sills). The east arm of the Y continues northeast from the main stem extending through Pipestone and Helena Lakes, terminating near the southeast tip of Schistose Lake[2, 3].							
Intrusion Age/Era	U-Pb 2732 (+4/-3) age of South Kakagi (Katimiagamak Lake Sills)[4]							
Geophysical Surveys								
Recent mapping	OGS Maps 2430[2], 2421[3], 2463[5], 2447[6], 2443[7], 2320[8]							
Morphology	Sills	**Strike**		**Dip**				
Size of Intrusion	The western arm of the crude Y-shape consists of 3 to 4 roughly parallel trending sets of sills that extend over approximately 9 km from Dad Lake to north of Katimiagamak Lake and range from approximately 100 to 900 m wide. The remainder of the sills trend roughly northeast extending over 23 km from southwest of Burditt Lake through Pipestone and Helena Lakes, and range from 50 m to 1200 m wide[2].							
Lithologies Present	This study: Gabbro, hornblende-gabbro, melagabbro, leucogabbro, hornblende-melagabbro, hornblende-leucogabbro, quartz-gabbro, pyroxenite to hornblendite, dunite, lherzolite, serpentinite, talc-chlorite schist, talc schist, and chlorite-calcite schist. Literature: Ultramafic lithologies are far less abundant compared with the mafic-gabbroic lithologies and are interpreted to be related to a later intrusive event possibly correlative with the differentiated ultramafic to mafic Kakagi Sills that intrude overlying felsic to intermediate metavolcanic rocks of the Kakagi Lake group[2,7].							
Distribution of Lithologies	Mafic>ultramafic							
Stratigraphic Sequence								
Metamorphic grade	Greenschist facies							
Alteration	Locally intense carbonate alteration related to shear zone development.							
Structure-Texture	The Pipestone Lakes area sills are affected by one to two episodes of folding. Anticlinal and synclinal axes are typically east-northeast oriented in the area between Dad Lake and Katimiagamak Lake (Nightjar Anticline). Three southwest-trending fold axes are indicated on Map 2430 between Line Bay and Helena Lake, as well as at least one more southwest-trending fold axis between Tompkins, Slender, and Dad Lakes[2]. These southwest-trending fold axes are parallel to the trend of the sills and may increase apparent sill width/thickness. Lithologies present are undeformed to locally intensely foliated and schistose. Fabric development typically coincides with proximity to major fault zones (Helena Pipestone Lakes Fault system) and other sheared zones. At least two samples of altered ultramafic rock (dunite to talc-chlorite schist) collected during this study display elongate pseudomorphs of olivine crystals that is suggestive of undercooling. These textures are typical of high-level intrusions and komatiitic flows.							
Magma Dynamics	Low							
Characteristic Mineralogy	Actinolite + chlorite + sericite + epidote							
Crystallization Sequence								
Host rocks	Mafic metavolcanic rocks and metasediments.							
Nature of contact	Intrusive	**Strike**		**Dip**				
Material analyzed	Grab samples	**Sample Distribution**	53 samples from NE-trending section between Burditt Lake and NW arm of Pipestone Lake. Outcrop exposure is good to excellent along shores of lake.					
Geochemical Characteristics: Please refer to figures 5, 7 and 9.								
Chemical affinity	Tholeiitic. Ti, Y and Zr ratios indicate a MORB-like source.							
Sulphide saturation	S-saturated to S-undersaturated.							
Pd/Pt ratios	**Range**	0.44-2.54	**Median**	0.93	**Average**	0.96	**Number of Samples**	33
Pt + Pd (ppb)	**Range**	0.5-87.4	**Median**	7.1	**Average**	13.1	**Number of Samples**	45
Ni/Cu ratios	**Range**	0.06-517.60	**Median**	2.10	**Average**	49.50	**Number of Samples**	52
Total Ni (ppm)	**Range**	17-2588	**Median**	64	**Average**	334	**Number of Samples**	52
Total Cu (ppm)	**Range**	2-805	**Median**	26	**Average**	88	**Number of Samples**	53
Total sulphur (wt %)	**Range**	0.01-0.92	**Median**	0.03	**Average**	0.10	**Number of Samples**	34
Anomalies	Good overall PGE values.							
Hypothetical Source Region	Depleted mantle based on limited trace element data.							
Tectonic Setting	Convergent margin to rifted arc							
Mineralization Type	Unknown							
Potential for exploration	3 (moderate sized intrusion, good overall PGE values)							

MISCELLANEOUS NOTES:

The descriptive summary that follows below is based on Edwards (1983)[2] and Edwards (1980)[3].

There are two major types of gabbro in the Pipestone Lake area: (1) (magnetite)-quartz-amphibole-gabbro and (2) leucocratic gabbro. As well, a third less common type appears to be mesocratic and melanocratic gradations of the leucocratic gabbro. A hybrid zone of gabbro occurs mainly at the contact between the leucocratic gabbro and quartz-amphibole-gabbro. Several ultramafic sills also occur in the map area[2].

In outcrop, the (magnetite)-quartz-amphibole gabbro is greenish beige to green in colour, fine- to coarse-grained and massive to schistose. Quartz abundance is variable and is present up to 15 %. Amphibole constitutes 35 to 60 % of the rock and is prismatic ranging in length from 0.5 to 1 cm. Very fine octahedral magnetite is present mainly in the finer grained portions in amounts of up to 15 %. Leucoxene is rarely present and is generally only evident in altered or deformed zones where it occurs as cream coloured skeletal, pseudomorphic and euhedral crystals up to 3 mm across or as light coloured streaks. A notable feature of the gabbro is that the magnetite rich zones (up to 60 m thick) have a tendency to remain fine- to medium-grained toward the centre. In thin section, the prismatic amphibole is a ragged and partly fibrous green to blue-green hornblende or green actinolite and in one example it is a pale green partly fibrous tremolite. Primary plagioclase is largely replaced by saussurite, carbonate or chlorite and commonly forms myrmekite with quartz. Quartz also occurs interstitially or as rounded aggregates up to 4 mm across. Albite is a minor secondary phase. In well-foliated quartz-gabbro, chlorite forms as fine-grained streaky aggregates that partially replace plagioclase. In outcrop, the leucocratic gabbro is cream coloured and medium-grained. In thin section, the texture of this rock varies from intergranular to ophitic with a grain size ranging from 2 to 3 mm. The major mafic component is a colourless to pale green, prismatic to fibrous tremolite-actinolite. Some amphiboles contain relict colourless clinopyroxene cores. Chlorite is usually an interstitial product and rarely replaces clinopyroxene. Plagioclase is subhedral to euhedral and is almost completely saussuritized. Epidote exhibits relict parting and occurs as clots up to 6 mm in size. Up to 10 % of skeletal leucoxene and less than 5 % of quartz is present. Quartz commonly rims saussuritic pseudomorphs. The third type of gabbro is similar in thin section to the leucocratic gabbro except that pseudomorphic tremolite-actinolite is poikilitic, larger in size (1 cm) and comprises a greater proportion of the rock.[2]

Several ultramafic sills generally associated with gabbro are located east of Helena-Pipestone Lake faults and along some shoreline outcrops on Campbell and Burditt Lakes. These sills are up to 150 m thick and are interpreted to be formerly semi-continuous sills that were tectonically deformed resulting in discontinuous, conformable pods and lenses that are partially or completely altered to either serpentine or talc and carbonate. Generally, the ultramafic rocks weather rusty brown. The outcrop may have the appearance of being pillowed where carbonate veins commonly cut talc-replaced ultramafic rocks. The fresh surfaces of the serpentinite range in colour from green and greenish brown to bluish green. In thin section, the primary ferromagnesian minerals are commonly replaced. Serpentine commonly pseudomorphs olivine and forms up to 75 % of the rock. Commonly, magnetite outlines the relict olivine grains. Fine talc is generally interstitial to the serpentine pseudomorphs, forming up to 35 % of the rock and probably replaces intercumulate and poikilitic orthopyroxene. Rare fine talc occurs within the serpentine pseudomorphs. Pale green chlorite (up to 15 %) is associated with the interstitial talc and also occurs more rarely as aggregates. Some of these ultramafic rocks are interpreted to be originally dunite in composition. Tremolite containing relict hypersthene cores forms 25 % of an ultramafic sill located north of Gates Ajar Narrows, Pipestone Lake. Fibrous tremolite also completely replaces pyroxene in a pyroxenite zone in the composite ultramafic sill situated 600 m northeast of Sand Point on the south arm of Pipestone Lake.[2, this study]

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Intrusion Number	OTH-016	**Intrusion Name**	Caliper Lake		
Location	60 km northwest of Fort Frances along Highway 71				
Township/Area	Claxton	**Resident Geologist District**	Kenora		
Property Name		**Access**	Road		
Geological Setting	The Caliper Lake mafic to ultramafic body is a southward, steeply dipping, layered gabbroic intrusion composed of pyroxenite to quartz diorite.[1] The same body is also described as an enclave of talcose peridotite, amphibolitized talcose peridotite, and amphibolite intruded by melanogabbro, gabbro, diorite, tonalite and trondhjemite.[2] The enclave or intrusion is surrounded by the Kishkutena tonalite of the Sabaskong Batholith.[2]				
Intrusion Age/Era	Unclear if pre or post Kishkutena tonalite. U-Pb date reported for the Kishkutena tonalite: 2724 +1.9/-1.8 Ma[2].				
Geophysical Surveys					
Recent mapping	OGS Maps 2443[3], 2542[4]				
Morphology	Enclave or stock-like intrusion, oval to oblate in map view.				
Size of Intrusion	Area: ~10 sq. km; Dimensions: 5 km in its long east-southeast oriented direction and almost 2 km at its widest point.[3]				
Lithologies Present	Granite to granodiorite, diorite to gabbro, monzonite, monzodiorite, hornblende pyroxenite, pyroxene hornblendite.				
Distribution of Lithologies	Mafic>ultramafic				
Stratigraphic Sequence	Unclear				
Metamorphic grade	Low to mid-amphibolite grade with retrograde greenschist facies overprints possible.				
Alteration	Local structurally controlled talc and serpentine (asbestos) alteration in pyroxenite near the northernmost contact of the enclave or intrusion.				
Structure-Texture	Weak to moderate foliation noted in the intermediate lithologies.	**Strike**	East-West	**Dip**	40° South
Magma Dynamics					
Characteristic Mineralogy	Mafic to ultramafic lithologies: hornblende, actinolite, pyroxene, plagioclase, chlorite				
Crystallization Sequence	Unclear				
Host rocks	Sabaskong Batholith				
Nature of contact	Unclear if the Caliper Lake body is an enclave (intruded by the Kishkutena tonalite) or intrusive (into the Kishkutena tonalite).	**Strike**	East-west	**Dip**	040° south
Material analyzed	Grab samples	**Sample Distribution**	11 samples collected along Highway 71 (north-south traverse through the body)		

Geochemical Characteristics: Please refer to figures 5, 7 and 9.

Chemical affinity	Insufficient data to determine affinities. Zr, Ti and Y ratios suggested unenriched MORB-like source							
Sulphide saturation	S-undersaturated?							
Pd/Pt ratios	**Range**	0.62-1.59	**Median**	1.10	**Average**	1.10	**Number of Samples**	2
Pt + Pd (ppb)	**Range**	0.6-32.6	**Median**	9.6	**Average**	13.1	**Number of Samples**	4
Ni/Cu ratios	**Range**	0.12-6.09	**Median**	1.65	**Average**	2.25	**Number of Samples**	11
Total Ni (ppm)	**Range**	4-355	**Median**	152	**Average**	118	**Number of Samples**	11
Total Cu (ppm)	**Range**	5-113	**Median**	47	**Average**	52	**Number of Samples**	11
Total sulphur (wt %)	**Range**	0.01-0.21	**Median**	0.05	**Average**	0.08	**Number of Samples**	10

Anomalies	Mildly anomalous Pt +Pd value of 32.6 ppb in pyroxenite
Hypothetical Source Region	Unclear
Tectonic Setting	Convergent margin
Mineralization Type	Unknown
Potential for exploration	2 (Reasonable overall PGE values, moderate sized body)

MISCELLANEOUS NOTES:

The Caliper Lake ultramafic to intermediate body is connected to a supracrustal belt to the east by a linear array of aeromagnetic anomalies.[2] The aeromagnetic anomalies are semi-continuous with basalt south of the Kishkutena tonalite and is therefore interpreted to represent a metamorphosed, partially melted and relict cumulate-textured subvolcanic magma chamber for the Katimiagamak basalt.[2] Diorite and hornblende-diorite adjacent to the body, interpreted as part of the layered intrusion[1], are considered similar to the Heronry diorite and formed from partial melting of the enclave during genesis of the Kishkutena tonalite.[2]

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[3] Blackburn, C.E. 1978. Geological compilation, Kenora-Fort Frances; Ontario Geological Survey, Map 2243, scale 1:253 440.

[4] Ontario Geological Survey 1991. Bedrock Geology of Ontario, West-Central Sheet; Ontario Geological Survey, Map 2542, scale 1:1 000 000.

Intrusion Number	OTH-017	**Intrusion Name**	Dobie Intrusion					
Location description	38 km WNW of Fort Francis, 6 km NW of Emo							
Township/Area	Dobie	**Resident Geologist District**	Kenora					
Property Name	Emo Prospect, Lot 9, concession I of Dobie Township[1] , Young Option[2]	**Access**	Road					
Geological Setting	The Dobie Intrusion is surrounded by the intermediate to felsic Tait volcanic rocks except for a 2 km length along its northwest margin where it is bordered by the Dobie mafic volcanic rocks. An intrusive relationship is evident in drill core from contact areas where angular inclusions of dacite, presumably from the Tait volcanic rocks, as well as other materials, are common. The northeast trending U-shape of the Dobie intrusion in map view is due to the presence of a younger granodiorite body approximately 3.4 km long by 1.9 km wide. A younger age for the granodiorite body is inferred based on intrusive relationships observed between similar granodiorite bodies in the area and Mather metasedimentary rocks that conformably overlie the Tait and Dobie volcanic rocks. Two satellite bodies of the Dobie intrusion occur to the south and southeast of the main stock[3]. Syn-volcanic to syn-tectonic?							
Intrusion Age/Era	Neo to Mesoarchean (2.5 to 3.4 Ga)[4]							
Geophysical Surveys	Maps 81531, 81532, 81536, 81537[5]							
Recent mapping	OGS Maps 1954-02[3], P.2047[6], 2443[7]							
Morphology	Stock, U-shaped due to intrusion of younger granodiorite body in northeast-central part of the (Dobie) intrusion							
Size of Intrusion	Area: ~12-13 sq. km, Dimensions: Maximum width of the intrusion is 4 km in an east-west direction and length is 6.5-7 km in a north-south direction. (6.5 km x 3 km)							
Lithologies Present	Metapyroxenite, gabbro, and hornblende-gabbro were sampled during the OTH-PGE study. The Dobie intrusion consists mainly of coarse-grained diabasic gabbro, medium-grained hypersthene-gabbro and norite, with minor amounts of coarse-grained pyroxenite and anorthosite.							
Distribution of Lithologies	Mafic>>ultramafic							
Stratigraphic Sequence/Zoning	The main body is crudely zoned with diabasic gabbro occurring in the central zone of the thickened southern part of the intrusion. Hypersthene gabbro partly encloses the diabasic gabbro to the southeast and north. The norite occurs in two lobes along the southern contact of the intrusion.[2]							
Metamorphic grade	Greenschist facies assemblages are noted in the metavolcanic and metasedimentary rocks of the area with local increases to amphibolite grade reflecting proximity to granitoid intrusions[2]. Petrographic examination of samples from this intrusion indicates upper greenschist to amphibolite facies metamorphic grades were attained with possible retrograde greenschist facies overprints.							
Alteration	Weak brownish weathering of relict pyroxene crystals suggests an original orthopyroxene content.							
Structure-Texture	Medium- to coarse-grained inequigranular textures are typical with local moderate to strong primary or secondary mineral alignment (primary layering or secondary foliation). Intrusion breccia consisting of blocks of pyroxenite in coarse-grained hornblende gabbro was observed in the southeastern most satellite body to the Dobie intrusion near Emo. Crystal shapes and relict corona textures suggest the original presence of pyroxene.							
Magma Dynamics	Intermediate.							
Characteristic Mineralogy	Plagioclase, hornblende, actinolite, chlorite, sericite							
Crystallization Sequence								
Host rocks	Intermediate to felsic volcanic rocks (Tait)							
Nature of contact	Intrusive	**Strike**		**Dip**				
Material analyzed	Grab samples	**Sample Distribution**	1 sample from east-northeast part of the main intrusive body, 2 samples from satellite body southeast of the main stock, one sample of diabase dike.					
Geochemical Characteristics: Please refer to figure 5, 7 and 9.								
Chemical affinity	Calc-alkaline (based on limited data). Limited Ti, Zr and Y data indicate a MORB-like source.							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	1.02-2.46	**Median**	1.74	**Average**	1.74	**Number of Samples**	2
Pt + Pd (ppb)	**Range**	1.3-52.1	**Median**	33.9	**Average**	29.1	**Number of Samples**	3
Ni/Cu ratios	**Range**	0.57-23.08	**Median**	2.41	**Average**	7.12	**Number of Samples**	4
Total Ni (ppm)	**Range**	37-554	**Median**	85	**Average**	190	**Number of Samples**	4
Total Cu (ppm)	**Range**	24-99	**Median**	45	**Average**	53	**Number of Samples**	4
Total sulphur (wt %)	**Range**	0.02-0.13	**Median**	0.03	**Average**	0.06	**Number of Samples**	3
Anomalies	Pt + Pd value of 52.1 ppb in clinopyroxenite and gabbro							
Hypothetical Source Region	Insufficient data							
Tectonic Setting	Convergent margin							
Mineralization Type	Type II – Stratabound disseminated. Principle ore minerals noted include pyrrhotite, pyrite, pentlandite, and chalcopyrite, with minor violarite, sphalerite, and magnetite. Best reported grades from a test pit located on the southwesternmost lobe of the intrusion are 2.52% nickel and trace copper. Two additional grab samples of disseminated sulphides from the same location yielded 0.31% and 0.40% copper and 0.31% and 0.41% nickel. The Young Option has reported reserves of 5 MT @ 0.28% Cu and 0.24% Ni[2].							
Potential for exploration	2 (High overall PGE values, however the intrusion is of limited small size)							

MISCELLANEOUS NOTES:

There are three main phases within the Dobie intrusion: coarse-grained diabasic gabbro, medium-grained hypersthene-gabbro, and norite. Coarse-grained pyroxenite and anorthosite also occur locally in minor amounts. The three main phases are distinguishable at a map scale on the basis of mafic content and textural features. Petrographic evidence indicates that the plagioclase becomes progressively more calcic through the sequence from diabasic gabbro to norite. Gradational contacts over 50 to 100 feet are noted between each of the phases.

Diabasic gabbro occurs mainly in the south-central part of the intrusion and is partly enclosed by the more extensive hypersthene-gabbro. Hypersthene-gabbro makes up nearly all the northeast trending arms of the intrusion and also occurs as a narrow band along the southeast margin. The third major phase, fine- to medium-grained norite, occurs in two lobes of the intrusive along its southern contact. This phase is significant because massive and disseminated nickeliferous sulphides are associated with it (Emo Prospect).

The Emo Prospect was not sampled during this study due to access limitations. First Nations Reserve No.11 (Manitou Rapids Indian Reserve) boundaries cover the southern half of the Dobie intrusion. Outcrop exposure is poor in the northern part of intrusion.

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[4] Ontario Geological Survey 1991. Bedrock Geology of Ontario, West-Central Sheet; Ontario Geological Survey, Map 2542, scale 1:1 000 000.

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Intrusion Number	OTH-018	**Intrusion Name**	Lash-Carpenter					
Location Description	27 km west of Fort Frances, 2 km east of Emo							
Township/Area	Lash, Carpenter	**Resident Geologist District**	Kenora					
Property Name	No known occurrences	**Access**	Road					
Geological Setting	The Lash-Carpenter stock intrudes and truncates the Carpenter mafic metavolcanic rocks on its northeast margin and is bordered by the relatively older Mather metasedimentary rocks (paragneisses) on its west and northwest margins. A larger monzonite to quartz-monzonite body intrudes and borders the Lash-Carpenter stock along its eastern and southern contacts. One outcrop of the quartz-monzonite also occurs along part of the western contact between the Lash-Carpenter stock and the Mather metasedimentary rocks. Several fragments or enclaves of the Lash-Carpenter stock occur in the monzonite to quartz-monzonite to the east and southeast of the main body. Outcrop exposure is poor in the southern 2/3 of the intrusion where the boundaries are defined mainly by geophysics.[1]							
Intrusion Age/Era	Neo to Mesoarchean (2.5 to 3.4 Ga)[2]							
Geophysical Surveys	OGS Maps 81531, 81532, 81536 and 81537[3]							
Recent mapping	OGS Maps 1954-02[1] and 2443[2]							
Morphology	Stock, kidney-shaped in map view	**Strike**		**Dip**				
Size of Intrusion	Area: ~27-30 sq. km. Dimensions: 8.5 km long and up to 3.5 km at maximum width.							
Lithologies Present	Gabbronorite, pyroxene-hornblende-gabbro, minor gabbro and leucogabbro.							
Distribution of Lithlogies	Mafic							
Stratigraphic Sequence	No compositional zoning and only one lithology: hypersthene-gabbro.[1] Observations made during the present study indicate three to four lithologies and primary layering within the intrusion.							
Metamorphic grade	Regional metamorphic grade is greenschist facies with local amphibolite grade occurring in proximity to granitoid intrusions[1]. Weak to moderate replacement of plagioclase by sericite±epidote and weak to locally moderate replacement of hornblende and pyroxene by actinolite±chlorite indicates that lower greenschist facies conditions also affected the Lash-Carpenter intrusion.							
Alteration	Local weak vein-controlled chlorite alteration, weak to moderate non-pervasive alteration of pyroxene to uralite.							
Structure-Texture	Primary layering, medium- to coarse-grained hypidiomorphic granular and corona textures (hornblende rimming clinopyroxene) are common. Development of a weak gneissosity has been observed in the intrusion near its margins.[1]							
Magma Dynamics	Low							
Characteristic Mineralogy	Plagioclase, clinopyroxene, hornblende, actinolite, orthopyroxene. The plagioclase composition is consistently labradorite with remaining mineralogy consisting of augite and hypersthene.[1]							
Crystallization Sequence	Plagioclase-clinopyroxene-orthopyroxene-hornblende							
Host rocks	Mafic metavolcanic rocks and paragneisses							
Nature of contact	The stock intrudes older volcanic and metasedimentary rocks on the west and northeast contacts. Monzonite to quartz-monzonite intrudes the stock on its eastern and southern part of the western contact.							
Material analyzed	Grab sample	**Sample Distribution**	Samples are concentrated mainly in the north-northeastern area of the intrusion where outcrop is most abundant. N=10 total samples of the Lash-Carpenter stock, N=1 sample of monzonite dike, and N=1 sample of lamprophyre dike					
Geochemical Characteristics: Please refer to figures 5, 7 and 9.								
Chemical affinity	Calc-alkaline.							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	1.08	**Median**	1.08	**Average**	1.08	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	1.35-3.87	**Median**	1.36	**Average**	2.19	**Number of Samples**	3
Ni/Cu ratios	**Range**	0.63-5.78	**Median**	1.18	**Average**	1.84	**Number of Samples**	12
Total Ni (ppm)	**Range**	5-561	**Median**	92	**Average**	130	**Number of Samples**	12
Total Cu (ppm)	**Range**	2-138	**Median**	74	**Average**	72	**Number of Samples**	12
Total sulphur (wt %)	**Range**	0.01-0.27	**Median**	0.03	**Average**	0.05	**Number of Samples**	9
Anomalies	None							
Hypothetical Source Region	Enriched mantle							
Tectonic Setting	Convergent margin							
Mineralization Type	Unknown							
Potential for exploration	1 (small intrusion, low overall PGE values)							

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[1] Fletcher, G.L. and Irvine, T.N. 1954. Geology of the Emo area; Ontario Department of Mines, Annual Report, v.63, pt.5, 36p. Accompanied by Map 1954-02, scale 1:63 360.

[2] Blackburn, C.E., Beard, R.C. and Rivett, A.S. 1981. Kenora-Fort Frances, geological compilation series, Kenora and Rainy River districts; Ontario Geological Survey, Map 2443, scale 1:253 440.

[3] Ontario Geological Survey 1990. Rainy River area, airborne electromagnetic survey, total intensity magnetic survey; Ontario Geological Survey, Maps 81531, 81532, 81536 and 81537, scale 1:20 000.

Intrusion Number	OTH 019		**Intrusion Name**	Grassy Portage				
Township/Area	Halkirk		**Resident Geologist District**	Red Lake				
Location Description	27 km ENE of Fort Frances							
Property Name							**Access**	Road, boat
Geological Setting	Synchronous with related mafic volcanism[1]. Hosted within metavolcanic rocks and metasediments.							
Intrusion Age/Era	2727 + 2 Ma[2]							
Geophysical Surveys								
Recent mapping	OGS Maps 2443[1], P.2032[3]							
Morphology	Lens-shaped			**Strike**	NE-SW		**Dip**	
Size of Intrusion	21 km long and up to 2 km wide							
Lithologies Present	Anorthosite, leucogabbro and gabbro							
Distribution of Lithologies	Ultramafic < Mafic							
Metamorphic grade	Amphibolite							
Alteration	Weak to intermediate chloritization and sericitization, minor hematization.							
Structure-Texture	Locally crudely modally-layered.			**Strike**			**Dip**	
Magma Dynamics								
Characteristic Mineralogy	Coarse-grained hornblende-bearing pegmatitic units observed to crosscut stratigraphy.							
Crystallization Sequence								
Host rocks	Mafic metavolcanic rocks and metasediments							
Nature of contact	Intrusive					**Strike**		**Dip**
Material analyzed	Grab sample		**Sample Distribution**	27 samples predominantly on the northern section. Southern section not sampled.				
Geochemical Characteristics: Please refer to figures 5, 7 and 9.								
Chemical affinity	High Fe-tholeiite							
Sulphide saturation	Mostly S-undersaturated							
Pd/Pt ratios	**Range**	0.54-5.80	**Median**	1.03	**Average**	1.52	**Number of Samples**	16
Pt + Pd (ppb)	**Range**	0.7-47.4	**Median**	11.9	**Average**	13.4	**Number of Samples**	28
Ni/Cu ratios	**Range**	0.12-13.25	**Median**	1.04	**Average**	2.22	**Number of Samples**	46
Total Ni (ppm)	**Range**	6-210	**Median**	50	**Average**	68	**Number of Samples**	46
Total Cu (ppm)	**Range**	3-1594	**Median**	70	**Average**	115	**Number of Samples**	46
Total sulphur (wt %)	**Range**	0.01-10.90	**Median**	0.04	**Average**	0.34	**Number of Samples**	42
Anomalies	Some anomalous values, but typically low.							
Hypothetical Source Region	Unclear (Zr, Ti and Y ratios extremely variable, therefore cannot deduce source region)							
Tectonic Setting	Convergent margin?							
Mineralization Type	None observed							
Potential for exploration	3 (potential for Type II mineralization similar to Junior Lake intrusion)							

MISCELLANEOUS NOTES:

Note: The description and summary that follows is based on Harris (1974)[1].

The Grassy Portage Bay sill is a lens-shaped (21 km long and up to 2 km wide) mafic intrusive complex located 27 km ENE of Fort Frances. In order of decreasing abundance, the sill is composed of hornblende-gabbro, anorthositic gabbro, garnetiferous gabbro, fine-grained gabbro dikes, and hornblendite. The hornblende-gabbro is exposed on either side of the anorthositic gabbro core and comprises most of the sill in Watten Township. Although a contact is not observed, inclusions of the anorthositic gabbro in the hornblende-gabbro indicate that the anorthositic gabbro is older. The hornblende gabbro is medium- to coarse-grained with an average grain size of 2 to 3 mm and is massive to foliated. The hornblende-gabbro consists dominantly of hornblende and plagioclase with minor amounts of quartz and trace amounts of sulphide and oxide minerals and sphene. The oxide phase is ilmenite and is commonly rimmed by sphene. The quartz occurs within the plagioclase or amphibole crystals and is interpreted to be an alteration product of these minerals. Zones of disseminated chalcopyrite and pyrrhotite may have economic potential and are located at the northern contact of the hornblende-gabbro and the mafic metavolcanic rocks near the Watten-Halkirk township boundary.

The anorthositic gabbro is exposed at the centre of the sill, east of the Watten-Halkirk township line and also occurs in small patches in Warren Township. In two outcrops, 5 to 10 cm wide primary bands of alternating hornblende-rich and hornblende-poor gabbro are exposed in the anorthositic core. The anorthositic gabbro is coarse-grained (10 to 15 mm) and consists of equant subhedral plagioclase crystals that are surrounded by interstitial amphibole. The colour index ranges from 20 to 45 and averages 30. In thin section, the amphibole crystals are fibrous and have a variably weak pleochroism. A trace amount of biotite and chlorite is associated with the amphibole. The plagioclase crystals are partially altered and have complex twinning. The anorthite content of two samples has a composition of An_{47} and An_{50}. The garnetiferous gabbro occurs locally and is best developed on the southeastern side of the sill where it is in contact with metasediments. This unit contains up to 20% red garnets that have an average diameter of 2 mm. In thin section, the garnetiferous gabbro contains up to 20% quartz. The garnet and associated quartz are interpreted to have resulted from the assimilation of the metasediments by the gabbro since several inclusions of metasediments are present in the garnetiferous gabbro.

Fine-grained massive gabbro dikes cut all other mafic phases of the Grassy Portage Bay sill and have chilled contacts. The widest mafic dike exposed has a width of 30 m. The mineralogy is similar to the hornblende-gabbro and plagioclase from one sample has a composition of An_{60}. The hornblendite occurs as a massive, medium-grained narrow band and is located along the northern contact between the hornblende gabbro and mafic metavolcanic rocks. The hornblendite band has an average width of 15 m and extends up to 548 m long. A contact is observed between the hornblende-gabbro and hornblendite where the hornblende-gabbro is intrusive into and contains inclusions of the hornblendite. The hornblendite contains up to 90% hornblende, forming aggregates of fine-grained fibrous crystals that are sometimes replaced by chlorite and biotite. The remainder of the hornblendite consists of plagioclase where one sample has a composition of An[illegible].

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[1] Harris, F.R. 1974. Geology of the Rainy Lake area, District of Rainy River; Ontario Division of Mines, Geological Report 115, 94p.
[2] Davis, D.W., Sutcliffe, R.M. and Kamo, S.L. 1989. New insights into Archean crustal development from geochronology in the Rainy Lake area, Superior Province, Canada; Journal of Geology, v.99, p.337-353.
[3] Blackburn, C.E., Beard, R.C. and Rivett, A.S. 1981. Kenora-Fort Frances, geological compilation series, Kenora and Rainy River districts; Ontario Geological Survey, Map 2443, scale 1:252 440.
[4] Rivett, S. and MacTavish, A.D. 1980. Kenora data series, Grassy Portage Bay-Rainy Lake area, District of Rainy River; Ontario Geological Survey, Preliminary Map P.2032, scale 1:15 840.

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Ontario Department of Mines-Geological Survey of Canada 1961. Aeromagnetic series, Seine Bay sheet, Rainy River District; Ontario Department of Mines-Geological Survey of Canada, Map 1159G, scale 1:63 360.

Intrusion Number	OTH-021			**Intrusion Name**	Mountdew Lake			
Township/Area	Boyer Lake area and Manitou-Stormy Lakes area			**Resident Geologist District**	Kenora			
Location Description	33.5 km south of Wabigoon, 1.4 km east of north channel of Upper Manitou Lake or Old Rock							
Property Name						**Access**	Road	
Geological Setting	The Mountdew Lake gabbro intrudes mafic metavolcanic rocks of the Boyer Lake Group of the Eagle-Wabigoon-Manitou Lakes greenstone belt. This intrusion is similar to the horizontally emplaced differentiated Boyer Lake gabbro sill and other gabbro bodies in the area that concordantly to discordantly intrude the Boyer Lake Group of mafic metavolcanic rocks[7]. Post-volcanic.							
Intrusion Age/Era	Post-Boyer Lake Group volcanism 2702.9 +14.4/-4.5 Ma[2]							
Geophysical Surveys	Surveys[3-4]							
Recent mapping	OGS Maps 2437[7], 2476[8], 42c[5], GSC Map 1153G[6]							
Morphology	Boomerang-shaped map pattern in plan view.		**Strike**			**Dip**		
Size of Intrusion	Area: 7 sq. km, dimensions: 6 km x 1.5 km							
Lithologies Present	Gabbro, melagabbro, quartz-gabbro, pyroxenite, lamprophyre.							
Distribution of Lithologies	Mafic							
Stratigraphic Sequence	Unclear							
Metamorphic grade	Greenschist							
Alteration	Local moderate intensity vein-controlled carbonate alteration. Local strong fracture-controlled chlorite alteration and weak vein-controlled chlorite alteration.							
Structure-Texture	Typically undeformed to weak to moderately foliated near fault zones and margins of the intrusion. Medium- to coarse-grained equigranular, granophyric, and ophitic to subophitic textures are common.							
Magma Dynamics	Low?							
Characteristic Mineralogy	Actinolite-tremolite, chlorite, saussurite.							
Crystallization Sequence	Unclear. Three intrusive phases are described.[7] See miscellaneous notes below.							
Host rocks	Mafic metavolcanic rocks							
Nature of contact	The Mountdew Lake gabbro discordantly intrudes mafic metavolcanic rocks of the Boyer Lake Group. Intrusion breccia consisting of mafic metavolcanic fragments in granophyric gabbro was observed along the southern margin of the intrusion further confirming an intrusive relationship[7].							
Material analyzed	Grab sample		**Sample Distribution**	6 samples were collected across the east-central part of the intrusion. Outcrop exposure is fair to good along Highway 812.				
Geochemical Characteristics: Please refer to figures 5, 7 and 9.								
Chemical affinity	Tholeiitic							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	1.73	**Median**	1.73	**Average**	1.73	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	1.1-13.6	**Median**	7.3	**Average**	7.3	**Number of Samples**	2
Ni/Cu ratios	**Range**	0.13-2.00	**Median**	0.60	**Average**	0.94	**Number of Samples**	5
Total Ni (ppm)	**Range**	4-140	**Median**	27	**Average**	60	**Number of Samples**	5
Total Cu (ppm)	**Range**	10-184	**Median**	38	**Average**	59	**Number of Samples**	6
Total sulphur (wt %)	**Range**	0.04-1.29	**Median**	0.07	**Average**	0.27	**Number of Samples**	6
Anomalies	None							
Hypothetical Source Region	Zr, Ti and Y data are inconclusive.							
Tectonic Setting	Convergent margin							
Mineralization Type	Unknown							
Potential for exploration	1-2 (moderate sized intrusion with low overall PGE values)							

MISCELLANEOUS NOTES:

The descriptive summary that follows is based on mapping and reports by Blackburn (1981)[7] and Blackburn (1982)[8].

The Mountdew Lake gabbro body discordantly intrudes the surrounding mafic metavolcanic rocks and is approximately 6 km long by 1.5 km wide with a boomerang-shaped map pattern in plan view. Its resistant nature is reflected in the topography with some of the highest hills in the area underlain by the Mountdew Lake gabbro. Several different phases of the gabbro are recognized, however boundaries between these units are not defined on maps of the area. The most dominant phase is a dark green, medium-grained gabbro that characterizes the eastern half of the body. Ophitic to subophitic textures in which secondary amphibole after pyroxene is intergrown with strongly saussuritized plagioclase is common. In thin section, serpentinized olivine remnants may constitute up to 5% of the rock.

The second most abundant phase is course-grained to pegmatitic gabbro found in the middle of the body immediately north of Mountdew Lake. Ophitic textures in this phase are common with course euhedral plagioclase enclosed by blades of pyroxene altered to amphibole up to 2 cm in length. Potassic feldspar crystals and or fractured and strained quartz may occupy the interstices between pyroxene and plagioclase crystals forming skeletal and vermicular, granophyric intergrowths with the saussuritized plagioclase. This phase also contains considerable amounts of magnetite or ilmenite, with alteration of the latter frequently highlighting the skeletal intergrowths of these two oxide minerals.

A third variety of gabbro occurs associated with the pegmatitic phase north of Mountdew Lake. The intensely altered nature of this fine- to medium-grained phase obscures the primary mineralogy and original course grain size. Clear, colourless "eyes" up to 1 mm in size are also an abundant product of alteration consisting of highly fractured grains of feldspar and quartz in thin section. Granophyre is a minor constituent of the Mosandow Lake gabbro body occurring near the center of the intrusion on its north and south contacts with the surrounding metavolcanic rocks. It is typically pink to mauve, coarse grained, and composed dominantly of interlocking twinned potassium feldspar crystals up to 5 mm in

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[1] Blackburn, C.E., Breaks, F.W., Edwards, G.R., Poulsen, K.H., Trowell, N.F. and Wood, J. 1982. Stratigraphy and Structure of the Western Wabigoon Subprovince, its Margins, Northwestern Ontario; Geological Association of Canada, 1982 Annual Meeting, Winnipeg, Field Trip Guide 3, p.105.

[2] Davis, D.W., Blackburn, C.E. and Krogh, T.E. 1982. Zircon U-Pb ages from the Wabigoon-Manitou Lakes region, Wabigoon Subprovince, northwest Ontario; Canadian Journal of Earth Science, v.19, p.254-266.

[3] Ontario Geological Survey 1979. Manitou-Stormy Lakes area, airborne electromagnetic survey, District of Kenora; Ontario Geological Survey, Maps 80458 to 80479, scale 1:20 000. (Erlis Data Set 1019).

[4] Ontario Geological Survey 2001. Ontario airborne geophysical surveys, magnetic and electromagnetic data, Stormy Lake area; Ontario Geological Survey, Geophysical Data Set 1107.

[5] Blackburn, C.E. 1981. Geology of the Boyer Lake-Meggisi Lake area, District of Kenora; Ontario Geological Survey, Report 202, 107p. Accompanied by Maps 2437 and 2438, scale 1:31 680.

[6] Blackburn, C.E. 1982. Geology of the Manitou Lakes area, District of Kenora (stratigraphy and petrochemistry); Ontario Geological Survey, Report 223, 61p. Accompanied by Map 2476.

[7] Thomson, J.E. 1934. Geology of the Manitou-Stormy Lakes area, Kenora District, Ontario; Ontario Department of Mines, Annual Report 1933, v.42, pt.4, 40p. Accompanied by Map 42c, scale 1:63 360.

[8] Ontario Department of Mines-Geological Survey of Canada 1961. Upper Manitou Lake, Kenora District, Ontario; Ontario Department of Mines-Geological Survey of Canada, Map 1153G, scale 1:63 360.

[illegible]	[illegible]	[illegible]	
Township Area	Contact Bay-Eagle Lake area	**Resident Geologist District**	Kenora
Location Description	15 km southwest of Dryden, 25 km southwest of Wabigoon, 2.3 km east of NE arm of Eagle Lake		
Property Name	Nabish Lake Prospect[1,2] (Johnston-Jones occurrences)[1] and Kozowy Prospect[2]	**Access**	Road, trails
Geological Setting	The Nabish Lake gabbro is one of several gabbroic plutons around the margin of the Atikwa Batholith. The gabbro intrudes mafic metavolcanic rocks along its north and northwest margins, while foliated granitoid rocks of the Atikwa Batholith surround the southern half of the intrusion.		
Intrusion Age/Era	2733.2 +1.0/-0.9 Ma[4] (age of the Mulcahy gabbro)		
Geophysical Surveys			
Recent mapping	OGS Maps 49D[3], 50E[3], 2443[3]		
Morphology	Irregular shaped stock or sill, oriented roughly N-S		
Size of Intrusion	Area: 22 sq. km, dimensions: ~11 km x (1.5-4 km)[3]		
Lithologies Present	Pyroxenite, leucogabbro, melagabbro, diorite		
Distribution of lithologies	Mafic-ultramafic		
Stratigraphic Sequence	Unclear		
Metamorphic grade	Greenschist facies		
Alteration	Local vein-controlled carbonate alteration, local vein-controlled silicification		
Structure-Texture	Cumulate layering	**Strike**	**Dip**
Magma Dynamics	Low to moderate		
Characteristic Mineralogy	Actinolite, chlorite, epidote, saussurite, plagioclase, serpentine		
Crystallization Sequence	Unclear		
Host rock	Mafic metavolcanic rocks and the Atikwa Batholith		
Nature of contact	The Nabish Lake gabbro intrudes the Eagle Lake mafic metavolcanic rocks of the Eagle-Wabigoon-Manitou Lakes greenstone belt on its north and northwestern margins. Provided that the age of the Nabish Lake gabbro is the same as the Mulcahy gabbro (2733.2 +1.0/-0.9 Ma[4]), it can be inferred that the younger (2731.8 +1.6/-1.3 Ma)[4] Atikwa Batholith intrudes the Nabish Lake gabbro on its remaining margins.		
Material analysed	Grab samples	**Sample Distribution**	9 samples collected from the north-central to northwestern part of the intrusion. Outcrop exposure is fair to poor along trails and roads.

Geochemical Characteristics: Please refer to figures 5, 7 and 9.

Chemical affinity	Possibly tholeiitic (cumulate samples complicate assignment of affinities). Ti-, Zr and Y ratios are MORB-like.							
Sulphide saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.90-2.08	**Median**	1.77	**Average**	1.63	**Number of Samples**	5
Pt + Pd (ppb)	**Range**	0.9-28.8	**Median**	6.8	**Average**	10.7	**Number of Samples**	6
Ni/Cu ratios	**Range**	0.32-44.44	**Median**	6.72	**Average**	12.19	**Number of Samples**	9
Total Ni (ppm)	**Range**	80-1911	**Median**	252	**Average**	471	**Number of Samples**	9
Total Cu (ppm)	**Range**	10-701	**Median**	58	**Average**	159	**Number of Samples**	9
Total sulphur (wt %)	**Range**	0.02-1.09	**Median**	0.04	**Average**	0.23	**Number of Samples**	9

Anomalies	Minor PGE anomalies
Hypothetical Source Region	Depleted mantle based on limited trace element data
Tectonic Setting	
Mineralization Type	The Nabish Lake Prospect, located just east of the south tip of Nabish Lake, was not sampled during this study. The mineralization is described as related to shearing in altered gabbro near a gabbro-granite contact[1], possibly corresponding to Type I or Type IV mineralization. The best reported grades are 1.5% Cu and 0.3% Ni from two test pits[1]. The Kozowy Prospect, located ½ mile west of Nabish Lake, was not sampled during this study due to limited access and poor exposure. Best reported grades include 3% Ni and 0.5% Cu from sulfide mineralization occurring along a north-trending breccia zone composed of sub-rounded andesitic fragments in a coarser dioritic matrix. The sulfides are described as nickeliferous pyrrhotite with lesser amounts of chalcopyrite, pyrite and minor pentlandite[2]. Kozowy Prospect mineralization may represent Type I or Type II mineralization. Minor fracture-controlled and disseminated pyrrhotite, chalcopyrite and pyrite were observed in two samples during this study. Additional three Cu and/or Ni-Cu occurrences are noted on Map 2443[3].
Potential for exploration	3 (moderately elevated PGE values overall, intermediate size intrusion)

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[1] Shklanka, R. 1969. Copper, nickel, lead and zinc deposits of Ontario; Ontario Department of Mines, Mineral Resources Circular 12, p.165.
[2] Thomson, J.E., Ferguson, S.A., Johnston, W.G.Q., Pye, E.G., Savage, W.S. and Thomson, R. 1957. Copper, nickel, lead, and zinc deposits in Ontario; Ontario Department of Mines, Metal Resources Circular No.2, 126p.
[3] Ontario Geological Survey 1987. Contact Bay area, District of Kenora; Ontario Geological Survey, Geological Data Inventory Folio 396, 63p.
[4] Morrison, D., Davis, D.W., Wooden, J.L., Bogard, D.D., Maczuga, D.E., Phinney, W.C. and Ashwal, L.D. 1985. Age of the Mulcahy Lake intrusion, northwest Ontario, and implications for the evolution of greenstone-granite terrains; Earth and Planetary Science Letters, v.73, p.305-316.

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[illegible]
pt.2, p.1-62. Accompanied by Map 50E, scale 1:31 680.
Blackburn, C.E. 1979. Kenora-Fort Frances, geological compilation series, Kenora and Rainy River districts; Ontario Geological Survey, Map 2443, scale 1:253 440.
Davis, D.W., Blackburn, C.E. and Krogh, T.E. 1982. *Zircon U-Pb ages from the Wabigoon-Manitou Lakes region, Wabigoon Subprovince, northwest Ontario*; Canadian Journal of Earth Sciences, v.19, p.254-266.

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Morrison, D.A. and Phinney, W.C. 1985. The Mulcahy Lake Gabbro, related intrusions; *in* Technical sessions, abstracts for the 31st annual institute on Lake Superior geology, p.60-61.

Intrusion Number	OTH-023	**Intrusion Name**	Pike Lake Intrusion					
Township/Area	SW Sturgeon Lake area-O'Briens Landing	**Resident Geologist District**	Kenora					
Location Description	55-60 km southwest of Savant Lake, 57 km east of Sioux Lookout.							
Property Name	Pike Lake copper occurrence[1]	**Access**	Road, trail					
Geological Setting	The Pike Lake gabbro intrudes mafic metavolcanic rocks of the Darkwater Lake volcanic cycle of the south-central Sturgeon Lake greenstone belt on its north, south, and on parts of its east and west margins. The Beidelman Bay Complex borders the Pike Lake gabbro on part of its eastern margin and the Shanty Lake Pluton on part of its western margin[2,3,4]. The Beidelman Bay complex and Pike Lake intrusion are thought to represent subvolcanic intrusions to the Sturgeon Lake volcano-sedimentary sequence[2].							
Intrusion Age/Era	U-Pb 2732.7 +3.6/-2.0 Ma[5]							
Geophysical Surveys	OGS Survey[6]							
Recent mapping	OGS Map 2458[4], GSC Map 3641[7]							
Morphology	Subelliptical stock.	**Strike**		**Dip**				
Size of Intrusion	Area: ~25 sq. km, dimensions: 9.25 km (longest point) x 3 km (widest point).							
Lithologies Present	Gabbro, melagabbro, quartz-gabbro, diorite, quartz-diorite							
Distribution of Lithologies	Mafic							
Stratigraphic Sequence								
Metamorphic grade	Greenschist facies							
Alteration	Local vein-controlled carbonate alteration.							
Structure-Texture	Typically undeformed to locally foliated. Medium- to coarse-grained subhedral granular and subophitic to ophitic textures are common. Primary magmatic layering has also been observed in this intrusion (see miscellaneous notes).							
Magma Dynamics	Low?							
Characteristic Mineralogy	Actinolite, chlorite, sericite, saussurite.							
Crystallization Sequence	Unclear. 13 phases have been identified based on textural and compositional differences in the gabbro including intrusion breccias[2,3,4].							
Host rocks	Mafic to felsic volcanic rocks of the Sturgeon Lake greenstone belt.							
Nature of contact	Intrusive							
Material analyzed	Grab samples	**Sample Distribution**	17 samples collected for good representation of the east and central parts of the intrusion. Two samples of the host rock also collected. Outcrop exposure is fair to good along roads and trails. Intersection of highways 599 and 642 lies immediately southeast of the intrusion with the former crossing the eastern end of the intrusion and the latter the western end.					
Geochemical Characteristics: Please refer to figures 5, 7 and 9.								
Chemical affinity	Tholeiitic.Y and Zr ratios indicate mildly enriched or crustally-contaminated source region.							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	0.97-1.58	**Median**	1.21	**Average**	1.25	**Number of Samples**	3
Pt + Pd (ppb)	**Range**	0.5-5.8	**Median**	2.0	**Average**	2.7	**Number of Samples**	7
Ni/Cu ratios	**Range**	0.04-5.20	**Median**	0.65	**Average**	1.78	**Number of Samples**	14
Total Ni (ppm)	**Range**	5-150	**Median**	61	**Average**	61	**Number of Samples**	14
Total Cu (ppm)	**Range**	10-503	**Median**	43	**Average**	80	**Number of Samples**	19
Total sulphur (wt %)	**Range**	0.01-0.66	**Median**	0.04	**Average**	0.09	**Number of Samples**	17
Anomalies	None							
Hypothetical Source Region	Mildy enriched source or crustally-contaminated source region.							
Tectonic Setting	Convergent margin							
Mineralization Type	Type V. Several Cu and Cu-Ni sulphide showings. Highest grades: 0.29% Cu and 283 ppm Ni associated with a 15 to 30 cm wide shear zone in the gabbro[1].							
Potential for exploration	1 (low overall PGE values)							

MISCELLANEOUS NOTES:

The multi-phase differentiated Pike Lake intrusion is described as massive to rarely foliated with subophitic to ophitic textures, and local cumulate layering. Gabbro and diorite form the dominant lithologies, with lesser porphyritic gabbro and diorite. Local intrusion breccias and hornblende pyroxenite of cumulate origin to the dominant gabbro phase are recognized. The gabbro phase also varies locally to quartz-diorite representing, with minor granophyric pegmatites, a late felsic differentiate phase. Three smaller gabbroic to dioritic intrusions occur in the vicinity of, and are probably satellite bodies to, the Pike Lake intrusion. At least one of these intrusions, located 3 km to the southwest, is indicated as multi-phase and differentiated[2,3,4].

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[6] Ontario Geological Survey 2000. Sturgeon Lake-Savant Lake area, total intensity magnetic survey, airborne electromagnetic survey; Ontario Geological Survey, Maps 81460 to 81505, scale 1:50 000.

[7] Sanborn-Barrie, M. and Skulski, T. 1998. Structural geology, Central Sturgeon Lake area, Ontario; Geological Survey of Canada, Open File Map 3641, scale 1:50 000.

OTHER REFERENCES:

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Horwood, H.C. 1938. Geology of the Superior Junction-Sturgeon Lake area; Ontario Department of Mines, Annual Report 1937, v.4, pt.6, p.1-25. Accompanied by Map 46D, scale 1:126 720 and Map 46E, scale 1:47 520.
Breaks, F.W. 1980. Sioux Lookout-Armstrong, geological compilation series, Kenora and Thunder Bay districts; Ontario Geological Survey, Map 2442, scale 1:253 440.

Intrusion Number	OTH-024		**Intrusion Name**	Cobb Bay-Sturgeon Lake North				
Township/Area	Handcuff Lake Area		**Resident Geologist District**	Kenora				
Location Description	63 km WNW of Sioux Lookout, 36 km SW of Savant Lake							
Property Name							**Access**	Road, boat
Geological Setting	Numerous mafic intrusive bodies in the vicinity of Cobb Bay, Six Mile Lake and Sturgeon Narrows occur within mafic to felsic metavolcanic sequences of the North Sturgeon Lake and Central Sturgeon Lake metavolcanic assemblages. The majority of the intrusions occur within a sequence of felsic to intermediate metavolcanic rocks, but also locally may occur in or directly overlying mafic metavolcanic rocks. The intrusions are interpreted as possibly comagmatic with or as subvolcanic intrusions to overlying upper mafic metavolcanic sequences.[1,2,3,4]							
Intrusion Age/Era	Post- or syn-volcanic assemblages which they intrude							
Geophysical Surveys	Maps 81460-81505[5], Erlis Data Set 1033[6]							
Recent mapping	OGS Maps 2458[2], 2335[7], GSC Map 3641[8]							
Morphology	Numerous discrete intrusions range from small, subcircular to elliptical shaped in plan view to larger, more irregularly shaped bodies.							
Size of Intrusion	Intrusions range from <100 m diameter up to 2.5 km long irregular-shaped bodies							
Lithologies Present	Melagabbro, pyroxenite and gabbro were observed within the intrusion sampled. Dominant lithologies within the suite of mafic intrusions include equigranular to porphyritic metadiorite to metagabbro with local anorthositic gabbro-diorite phases. Anorthositic phases may also occur as discrete intrusions that display both sill-like cumulate and dike-like laminar-flow segregation features. The intrusions are noted as difficult to distinguish from the surrounding metavolcanic rocks, particularly with the medium- to coarse-grained centers of mafic metavolcanic flows. Distinguishing features of the suite include strongly saussuritized plagioclase, the presence of abundant titanite, and local chill zones at the boundaries of single intrusions.[1,2,3,4,7]							
Distribution of lithologies	Mafic							
Stratigraphic Sequence								
Metamorphic grade	Greenschist facies							
Alteration	Local vein-controlled chlorite-epidote alteration, local vein-controlled carbonate alteration							
Structure-Texture	Undeformed to moderately foliated			**Strike**			**Dip**	
Magma Dynamics								
Characteristic Mineralogy	Actinolite-chlorite-epidote							
Crystallization Sequence								
Host rocks	Mafic to felsic volcanic rocks							
Nature of contact	Intrusive				**Strike**		**Dip**	
Material analyzed	Grab sample		**Sample Distribution**	Three samples obtained from an intrusion west of Cobb Bay				
Geochemical Characteristics: Please refer to figures 5, 7 and 9.								
Chemical affinity	High Fe-tholeiites. Ti, Zr and Y ratios indicate MORB-like source							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Pt + Pd (ppb)	**Range**	0.7-1.6	**Median**	1.2	**Average**	1.2	**Number of Samples**	2
Ni/Cu ratios	**Range**	0.51-0.84	**Median**	0.64	**Average**	0.66	**Number of Samples**	3
Total Ni (ppm)	**Range**	81-119	**Median**	102	**Average**	101	**Number of Samples**	3
Total Cu (ppm)	**Range**	141-159	**Median**	159	**Average**	153	**Number of Samples**	3
Total sulphur (wt %)	**Range**	0.03-0.12	**Median**	0.08	**Average**	0.08	**Number of Samples**	3
Anomalies	None							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Convergent margin to rifted arc?							
Mineralization Type	Unknown							
Potential for exploration	1 (low PGE values)							

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Ontario Geological Survey 1991. Bedrock Geology of Ontario, West-Central Sheet; Ontario Geological Survey, Map 2542, scale 1:1 000 000.

Intrusion Number	OTH-025	**Intrusion Name**	Handcuff Lake					
Location description	55 km E of Sioux Lookout, 34 km SW of Savant Lake							
Township/Area	Handcuff Lake Area, west of Sturgeon Lake	**Resident Geologist District**	Kenora					
Property Name		**Access**	Road, boat?					
Geological Setting	The Handcuff Lake gabbro is surrounded by younger foliated and undeformed felsic to intermediate rocks of the Sturgeon River batholith, except on part of its eastern margin where it intrudes mafic metavolcanic rocks of the North Sturgeon Lake volcanic assemblage.[1] Syn- to post-volcanic, but pre-tectonic.							
Intrusion Age/Era	Neo to Mesoarchean							
Geophysical Surveys								
Recent mapping	OGS Maps P.2293[1], 2442[2]							
Morphology	Irregularly shaped body composed of three west-northwest to east-west trending lobes connected on northwest margin.[1]							
Size of Intrusion	Area: 60-65 sq. km, dimensions: northernmost lobe: 9 km x 1.5 km, center lobe: 10 km x 2 km, southernmost lobe 10 km x 5 km.[1]							
Lithologies Present	Dominant lithologies include gabbro to diorite and quartz-diorite in the northernmost lobes with some anorthositic gabbro, gabbroic anorthosite, and amphibolite toward the east. The southwesternmost lobe of the body is characterized mainly by diorite and quartz-diorite. Xenoliths of very fine- to fine-grained amphibolite are abundant in the northernmost lobes and are assumed to be volcanic in origin. Fine-grained mafic dikes and occasional quartz-feldspar porphyry dikes also characterize this area of the intrusion.[1,3]							
Distribution of Lithologies	Mafic							
Stratigraphic Sequence								
Metamorphic grade								
Alteration								
Structure-Texture	It has been suggested that the intrusion is crudely layered based on the spatial variation in lithologies as well as minor variations in crystal size, color index and magnetism.[3] The distribution of lithologies on OGS Map P.2293 also suggests crude layering of the intrusion: diorite to quartz-diorite lithologies dominate in the south-western lobe of the body while the northern lobe ranges from mainly gabbro to diorite and quartz-diorite with some anorthositic gabbro, gabbroic anorthosite, and amphibolite occurring toward the east margin (of the northern lobe).[1]							
Magma Dynamics	Low?							
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Mafic metavolcanic rocks							
Nature of contact	The Handcuff Lake gabbro is interpreted to intrude mafic metavolcanic rocks of the Sturgeon Lake greenstone belt on part of its eastern margin. The presence of fine-grained amphibolite fragments/xenoliths interpreted to be volcanic in origin supports this intrusive relationship. Rocks of the younger Sturgeon River Batholith intrude and surround the Handcuff Lake gabbro on all other margins.[1]							
Material analyzed	*Powders	**Sample Distribution**	11 samples from the eastern end of the central lobe of intrusion					
Geochemical Characteristics: Please refer to figures 5, 7 and 9.								
Chemical affinity	Calc-alkaline? Zr/Y ratios indicate MORB-like source (limited data)							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	1.24	**Median**	1.24	**Average**	1.24	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	13.9	**Median**	13.9	**Average**	13.9	**Number of Samples**	1
Ni/Cu ratios	**Range**	0.24-2.72	**Median**	0.65	**Average**	1.12	**Number of Samples**	11
Total Ni (ppm)	**Range**	18-205	**Median**	62	**Average**	76	**Number of Samples**	11
Total Cu (ppm)	**Range**	25-160	**Median**	78	**Average**	84	**Number of Samples**	11
Total sulphur (wt %)	**Range**	0.01-0.16	**Median**	0.08	**Average**	0.08	**Number of Samples**	10
Anomalies	None							
Hypothetical Source Region	Unclear							
Tectonic Setting	Convergent margin							
Mineralization Type	Unknown							
Potential for exploration	2 (large intrusion, but with very low PGE values – more work required)							

MISCELLANEOUS NOTES:

*Samples from G. Seim, OGS. More assay results are published in Mason et al. 2000.

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Intrusion Number	OTH-026		**Intrusion Name**	Samuels Lake				
Township/Area	Beaverhouse Lake Area		**Resident Geologist District**	Thunder Bay South				
Location Description	41 km SSW of Atikokan							
Property Name							**Access**	Road
Geological Setting	The Samuels Lake Intrusion forms one of the numerous Quetico Intrusions, which were emplaced in the Quetico Subprovince near, or within, the margins of the Quetico Batholithic Complex. These mafic to ultramafic intrusions form sills, plugs and small stocks that are composed of a variety of hornblende-rich lithologies ranging from diorite to peridotite.							
Intrusion Age/Era	See miscellaneous comments							
Geophysical Surveys								
Recent mapping	OGS Maps 2065[1], 2405[2]							
Morphology	Elliptical in plan view with crude concentric zoning of lithologies							
Size of Intrusion	0.6 km by 0.3 km							
Lithologies Present	Gabbro, clinopyroxenite, hornblendite, werhlite, and monzodiorite/diorite.[3]							
Distribution of Lithologies	Ultramafic >> Mafic							
Metamorphic grade	Amphibolite							
Alteration								
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Turbiditic metasedimentary rocks							
Nature of contact	Intrusive							
Material analyzed	Grab sample and drill core*			**Sample Distribution**	7 samples			
Geochemical Characteristics: Please refer to figures 11, 12 and 13.								
Chemical affinity	Alkalic[4]							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.88-1.78	**Median**	1.17	**Average**	1.28	**Number of Samples**	5
Pt + Pd (ppb)	**Range**	8.0-402.0	**Median**	39.8	**Average**	167.1	**Number of Samples**	5
Ni/Cu ratios	**Range**	0.01-1.36	**Median**	0.64	**Average**	0.57	**Number of Samples**	7
Total Ni (ppm)	**Range**	4-9784	**Median**	283	**Average**	1841	**Number of Samples**	7
Total Cu (ppm)	**Range**	55-7219	**Median**	553	**Average**	1873	**Number of Samples**	7
Total sulphur (wt %)	**Range**	0.14-8.81	**Median**	1.01	**Average**	2.10	**Number of Samples**	7
Anomalies	Reported grades include 2450 ppb Pd, 1550 ppb Pt, 2350 ppm Cu, 545 ppm Ni; 1835 ppb Pd, 2087 ppb Pt, 7524 ppm Cu, 550 ppm Ni; and 712 ppb Pd, 11421 ppb Pt.[5]							
Hypothetical Source Region	Water-rich metasomatized mantle							
Tectonic Setting	Unclear[6]							
Mineralization Type	Type 1							
Potential for exploration	3 (High PGE values, mineralization present in belt, single intrusions are small in size but represent large volume of magma when combined.)							

MISCELLANEOUS NOTES:

The Samuels Lake intrusion is located approximately 40 km west of Atikokan within the Quetico Subprovince. It is an elliptical body approximately 600 m long by 300 m wide that is concentrically zoned. It consists of a wehrlite core surrounded by a hornblendite zone and a pyroxenite exterior. Four igneous phases are recognized within the intrusion: wehrlite, pyroxenite, hornblendite, and monzodiorite/diorite. Each phase is described as displaying wide variations in composition due to varying proportions of constituent minerals. The pyroxenite is the most abundant phase and typically consists of coarse-grained uralitized clinopyroxene that exhibits gradational to sharp contacts with the hornblendite phase. Hornblendite occurs both near the center of the intrusion and as large pods within the pyroxenite and does not host significant sulphide or PGE mineralization. Wehrlite is the third most abundant phase and consists primarily of clinopyroxene and serpentinized pseudomorphs of olivine. Sulphides may constitute up to 40 volume percent of the wehrlite phase. The monzodiorite to diorite is a minor phase that occurs mainly as small dikes and as an inclusion-rich plug, both of which cut the hornblendite phase. Pyroxenite and wehrlite are the main host phases of sulphide mineralization, with the bulk occurring in the wehrlite phase.[7]

The Quetico intrusions are hosted in turbiditic greywackes (<2696 Ma)[8] and are cut by granitic dykes of 2670-2665 Ma[9].

**samples courtesy of Keiko Hattori, University of Ottawa*

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[7]Pettigrew, N.T., Hattori, K.H. and Percival, J.A. 2000. Samuels Lake Intrusion: a late Archean Cu-Ni-PGE-bearing mafic-ultramafic complex in the western Quetico Subprovince, northwestern Ontario; *in* Current Research 2000-C20, Geological Survey of Canada, 8p.
[8]Davis, D.W. and Corfu, F. 1995. Correlations and contrasts among Superior Province terranes from U-Pb geochronology and Hf isotopes; International Union of Tectonics and Metallogeny of Early/Mid Precambrian orogenic belts, Precambrian 95, Program and abstracts, p.34.
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Intrusion Number	OTH-027		**Intrusion Name**	McQuat Lake-Stawson				
Township/Area	McQuat Lake Area		**Resident Geologist District**	Thunder Bay South				
Location Description	E of Atikokan							
Property Name						**Access**		
Geological Setting	The McQuat Lake-Stawson Intrusion forms one of the numerous Quetico Intrusions, which were emplaced in the Quetico Subprovince near, or within, the margins of the Quetico Batholithic Complex. These mafic to ultramafic intrusions form sills, plugs and small stocks that are composed of a variety of hornblende-rich lithologies ranging from diorite to peridotite.							
Intrusion Age/Era	See miscellaneous notes.							
Geophysical Surveys								
Recent mapping	OGS Maps 2065[1], 2405[2]							
Morphology								
Size of Intrusion								
Lithologies Present	Clinopyroxenite							
Distribution of Lithologies	Ultramafic >> Mafic							
Metamorphic grade	Amphibolite							
Alteration								
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Turbiditic metasedimentary rocks							
Nature of contact	Intrusive							
Material analyzed	Grab sample*		**Sample Distribution**	1 sample				
Geochemical Characteristics: Please refer to figures 11, 12 and 13.								
Chemical affinity	Alkalic[3]							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	1.13	**Median**	1.13	**Average**	1.13	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	3.2	**Median**	3.2	**Average**	3.2	**Number of Samples**	1
Ni/Cu ratios	**Range**	0.77	**Median**	0.77	**Average**	0.77	**Number of Samples**	1
Total Ni (ppm)	**Range**	201	**Median**	201	**Average**	201	**Number of Samples**	1
Total Cu (ppm)	**Range**	261	**Median**	261	**Average**	261	**Number of Samples**	1
Total sulphur (wt %)	**Range**	0.42	**Median**	0.42	**Average**	0.42	**Number of Samples**	1
Anomalies								
Hypothetical Source Region	Water-rich metasomatized mantle							
Tectonic Setting								
Mineralization Type	Unknown							
Potential for exploration	3 (High PGE values, mineralization present in belt, however intrusions are small in size)							

MISCELLANEOUS NOTES:

*Sample courtesy of Keiko Hattori, University of Ottawa
The Quetico intrusions are hosted in turbiditic greywackes (<2696 Ma)[4] and are cut by granitic dykes of 2670-2665 Ma[5].

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Shklanka, R. 1972. Geology of the Steep Rock Lake Area, District of Rainy River, Ontario; Ontario Department of Mines and Northern Affairs, Geological Report 93, pt.1, p.1-82.

Intrusion Number	OTH-028		**Intrusion Name**	Nym Lake-Bergman Intrusion				
Township/Area	Pickerel Lake-North area		**Resident Geologist District**	Thunder Bay South				
Location Description	11.8 km SE of Atikokan							
Property Name							**Access**	
Geological Setting	The Nym Lake-Bergman Intrusion forms one of the numerous Quetico Intrusions, which were emplaced into the Quetico Subprovince near, or within, the margins of the Quetico Batholithic Complex. These mafic to ultramafic intrusions form sills, plugs and small stocks that are composed of a variety of hornblende-rich lithologies ranging from diorite to peridotite.							
Intrusion Age/Era	See miscellaneous notes.							
Geophysical Surveys								
Recent mapping	OGS Maps 2065[1], 2405[2]							
Morphology	Rafted block or large xenolith within the border region of the Quetico Batholithic Complex							
Size of Intrusion	0.3 km by 0.1 km							
Lithologies Present	Hornblendite, feldspathic hornblendite							
Stratigraphic Sequence								
Metamorphic grade	Amphibolite							
Alteration								
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Varitextured to pegmatitic, quartz monzonitic border region of the Quetico Batholithic Complex							
Nature of contact	Intrusive							
Material analyzed	Grab sample*			**Sample Distribution**	1 sample			
Geochemical Characteristics: Please refer to figures 11, 12 and 13.								
Chemical affinity	Alkalic[3]							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	1.03	**Median**	1.03	**Average**	1.03	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	104.7	**Median**	104.7	**Average**	104.7	**Number of Samples**	1
Ni/Cu ratios	**Range**	0.55	**Median**	0.55	**Average**	0.55	**Number of Samples**	1
Total Ni (ppm)	**Range**	552	**Median**	552	**Average**	552	**Number of Samples**	1
Total Cu (ppm)	**Range**	1012	**Median**	1012	**Average**	1012	**Number of Samples**	1
Total sulphur (wt %)	**Range**	0.45	**Median**	0.45	**Average**	0.45	**Number of Samples**	1
Anomalies								
Hypothetical Source Region	Water-rich metasomatized mantle							
Tectonic Setting								
Mineralization Type	Type I							
Potential for exploration	3 (High PGE values, mineralization present in belt, however intrusions are small in size)							

MISCELLANEOUS NOTES:

The Bergman Intrusion forms a small island within the northwestern bay of Nym Lake. It is composed of massive and altered, locally biotitic, coarse-grained, hornblendite and feldspathic hornblendite. Actinolite and chlorite are common alteration products. A thin wedge of clastic metasedimentary rocks in contact with the hornblendite suggests that the intrusion is a rafted block or large xenolith enclosed within the varitextured to pegmatitic, quartz monzonitic border regions of the Quetico Batholithic Complex. The contact is sharp, undulatory, and weakly chilled, and in turn, is cross-cut by the quartz monzonite country rocks. Additional supporting evidence is the lack of a pronounced, coincident, airborne magnetic anomaly characteristic of the Quetico Intrusions.[4] See reference for details.

The Quetico intrusions are hosted in turbiditic greywackes (<2696 Ma)[5] and are cut by granitic dykes of 2670-2665 Ma[6].

**sample courtesy of Keiko Hattori, University of Ottawa*

REFERENCES:

[1] Pye, E.G. and Fenwick, K.G. 1965. Atikokan-Lakehead sheet, Geological Compilation Series, Kenora, Rainy River and Thunder Bay Districts; Ontario Geological Survey, Map 2065, scale 1:253 440.
[2] Pirie, J. 1978. Crooked Pine Lake, Rainy River District; Ontario Geological Survey, Map 2405, scale 1:31 680.
[3] Lassen, B., Hattori, K. and Percival, J. 2000. Mineralogy and geochemistry of Archean alkaline intrusions from the western Superior Province; *in* Lithoprobe Western Superior Transect, Sixth Annual Workshop, LithoProbe Report 77, p.70-74.
[4] MacTavish, A.D. 1999. The Mafic-Ultramafic Intrusions of the Atikokan-Quetico Area, Northwestern Ontario; Ontario Geological Survey, Open File Report 5997, 127p.
[5] Davis, D.W. and Corfu, F. 1995. Correlations and contrasts among Superior Province terranes from U-Pb geochronology and Hf isotopes; International Union of Tectonics and Metallogeny of Early/Mid Precambrian orogenic belts, Precambrian 95, Program and Abstracts, p.34.
[6] Percival, J.A. and Sullivan, R.W. 1988. Age constraints on the origin of the Quetico belt, Superior Province, Canada; *in* Radiogenic and Isotopic Studies, Report 2, Geological Survey of Canada, Paper 88-2, p.97-107.

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Percival, J.A. 1988. Geology, Quetico, Ontario-United States; Geological Survey of Canada, Map 1682A, scale 1:250 000.
Shklanka, R. 1972. Geology of the Steep Rock Lake Area, District of Rainy River, Ontario; Ontario Department of Mines and Northern Affairs, Geological Report 93, pt.1, p.1-82.

Intrusion Number	OTH-029		**Intrusion Name**	Nickelbee Lake-Fire Lake Dike				
Township/Area			**Resident Geologist District**	Thunder Bay South				
Location Description	Near Atikokan							
Property Name							**Access**	Road
Geological Setting	The Nicklebee Intrusion forms one of the numerous Quetico Intrusions, which were emplaced in the Quetico Subprovince near, or within, the margins of the Quetico Batholithic Complex. These mafic to ultramafic intrusions form sills, plugs and small stocks that are composed of a variety of hornblende-rich lithologies ranging from diorite to peridotite.							
Intrusion Age/Era	See miscellaneous notes.							
Geophysical Surveys								
Recent mapping	OGS Maps 2065[1], 2405[2]							
Morphology								
Size of Intrusion								
Lithologies Present	Wehrlite							
Distribution of Lithologies	Ultramafic							
Metamorphic grade	Amphibolite							
Alteration								
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Turbiditic metasedimentary rocks							
Nature of contact	Intrusive							
Material analyzed	Grab sample*		**Sample Distribution**	1				
Geochemical Characteristics: *Please refer to figures 11, 12 and 13.*								
Chemical affinity	Alkalic[3]							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	1.91	**Median**	1.91	**Average**	1.91	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	8.6	**Median**	8.6	**Average**	8.6	**Number of Samples**	1
Ni/Cu ratios	**Range**	0.76	**Median**	0.76	**Average**	0.76	**Number of Samples**	1
Total Ni (ppm)	**Range**	879	**Median**	879	**Average**	879	**Number of Samples**	1
Total Cu (ppm)	**Range**	1158	**Median**	1158	**Average**	1158	**Number of Samples**	1
Total sulphur (wt %)	**Range**	0.92	**Median**	0.92	**Average**	0.92	**Number of Samples**	1
Anomalies	High PGE values							
Hypothetical Source Region	Water-rich metasomatized mantle							
Tectonic Setting								
Mineralization Type	Unknown							
Potential for exploration	3 (High background PGE numbers, mineralization present in belt, however intrusions are small in size)							

MISCELLANEOUS NOTES:

The Quetico intrusions are hosted in turbiditic greywackes (<2696 Ma)[4] and are cut by granitic dykes of 2670-2665 Ma[5].
**sample courtesy of Keiko Hattori, University of Ottawa*

REFERENCES:

[1] Pye, E.G. and Fenwick, K.G. 1965. Atikokan-Lakehead sheet, Geological Compilation Series, Kenora, Rainy River and Thunder Bay Districts; Ontario Geological Survey, Map 2065, scale 1:253 440.
[2] Pirie, J. 1978. Crooked Pine Lake, Rainy River District; Ontario Geological Survey, Map 2405, scale 1:31 680.
[3] Lassen, B., Hattori, K. and Percival, J. 2000. Mineralogy and geochemistry of Archean alkaline intrusions from the western Superior Province; *in* Lithoprobe Western Superior Transect, Sixth Annual Workshop, LithoProbe Report 77, p.70-74.
[4] Davis, D.W. and Corfu, F. 1995. Correlations and contrasts among Superior Province terranes from U-Pb geochronology and Hf isotopes; International Union of Tectonics and Metallogeny of Early Mid Precambrian orogenic belts, Precambrian 95, Program and Abstracts, p.34.
[5] Percival, J.A. and Sullivan, R.W. 1988. Age constraints on the origin of the Quetico belt, Superior Province, Canada; *in* Radiogenic and Isotopic Studies, Report 2, Geological Survey of Canada, Paper 88-2, p.97-107.

OTHER REFERENCES:

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Intrusion Number	OTH 070		**Intrusion Name**	Eva Lake				
Township Area			**Resident Geologist District**	Thunder Bay South				
Location Description	Within the Eva Lake Area, approximately 30.2 km east-southeast of Atikokan, 400 m west of Eva Lake, and 300 m west of Highway 633.							
Property Name						**Access**		
Geological Setting	The Eva Lake Intrusion forms one of the numerous Quetico Intrusions, which were emplaced into the Quetico Subprovince near, or within, the margins of the Quetico Batholithic Complex. These mafic to ultramafic intrusions form sills, plugs and small stocks that are composed of a variety of hornblende rich lithologies ranging from diorite to peridotite.							
Intrusion Age/Era	See miscellaneous notes							
Geophysical Surveys								
Recent mapping	OGS Maps 2065[1], 2405[2]							
Morphology	Roughly circular with a 25 m long dike-like tail.							
Size of Intrusion	0.125 km diameter, 25 m long dike-like tail.							
Lithologies Present	Hornblende peridotite, olivine clinopyroxene hornblendite.							
Distribution of Lithologies	Ultramafic >> Mafic							
Metamorphic grade	Amphibolite							
Alteration								
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Turbiditic metasedimentary rocks.							
Nature of contact	Intrusive							
Material analyzed	Grab sample*			**Sample Distribution**	1 samples			
Geochemical Characteristics: Please refer to figures 11, 12 and 13.								
Chemical affinity	Alkalic[3]							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	1.85	**Median**	1.85	**Average**	1.85	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	23.0	**Median**	23.0	**Average**	23.0	**Number of Samples**	1
Ni/Cu ratios	**Range**	2.37	**Median**	2.37	**Average**	2.37	**Number of Samples**	1
Total Ni (ppm)	**Range**	390	**Median**	390	**Average**	390	**Number of Samples**	1
Total Cu (ppm)	**Range**	165	**Median**	165	**Average**	165	**Number of Samples**	1
Total sulphur (wt %)	**Range**	0.400	**Median**	0.400	**Average**	0.400	**Number of Samples**	1
Anomalies	Two samples contain up to 1.29% Cu, 0.39% Ni, 730 ppb Au, 630 ppb Pt, and 840 ppb Pd.[4]							
Hypothetical Source Region	Water-rich metasomatized mantle							
Tectonic Setting								
Mineralization Type	Type I							
Potential for exploration	3 (High PGE values, mineralization present in bulk, however intrusions are small in size)							

MISCELLANEOUS NOTES:

The Eva Lake intrusion is poorly exposed. The Eva Lake intrusion consists of weathered, strongly altered, hornblende peridotite and olivine-clinopyroxene hornblendite. Both rock types contain abundant large hornblende oikocrysts. This intrusion contains a 15 m exposed mineralized zone consisting of 5 to 20% disseminated to blebby chalcopyrite and pyrrhotite and considerable amounts of very finely disseminated magnetite.[4] See reference for details.

The Quetico intrusions are hosted in turbiditic greywackes (<2690 Ma)[6] and are cut by granitic dykes of 2670-2665 Ma[5].

**sample courtesy of Keiko Hattori, University of Ottawa*

REFERENCES:

[1] Pye, E.G. and Fenwick, K.G. 1965. Atikokan-Lakehead sheet, Geological Compilation Series, Kenora, Rainy River and Thunder Bay Districts, Ontario Geological Survey, Map 2065, scale 1:253 440.
[2] Pirie, J. 1978. Crooked Pine Lake, Rainy River District, Ontario Geological Survey, Map 2405, scale 1:31 680.
[3] Lasson, B., Hattori, K. and Percival, J. 2000. Mineralogy and geochemistry of Archean alkaline intrusions from the western Superior Province; in Lithoprobe Western Superior Transect, Sixth Annual Workshop, LithoProbe Report 77, p.70-74.
[4] MacTavish, A.D. 1999. The Mafic-Ultramafic Intrusions of the Atikokan-Quetico Area, Northwestern Ontario; Ontario Geological Survey, Open File Report 5997, 127p.
[5] Davis, D.W. and Corfu, F. 1995. Correlations and contrasts among Superior Province terranes from U-Pb geochronology and Hf isotopes; International Union of Tectonics and Metallogeny of Early Mid Precambrian orogenic belts, Precambrian 95, Program and Abstracts, p.34.
[6] Percival, J.A. and Sullivan, R.W. 1988. Age constraints on the origin of the Quetico belt, Superior Province, Canada; in Radiogenic and Isotopic Studies, Report 2, Geological Survey of Canada, Paper 88-2, p.97-107.

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Percival, J.A. 1989. Geology, Quetico, Ontario-United States; Geological Survey of Canada, Map 1682A, scale 1:250 000.
Pirie, J. 1978. Geology of the Crooked Pine Lake Area, Rainy River District, Ontario; Ontario Geological Survey, Report 179, 73p. (includes Map 2405).

Intrusion Number	OTH-031/032	**Intrusion Name**	Kawene Lake Complex					
Township/Area	Hutchinson	**Resident Geologist District**	Thunder Bay South					
Location Description	2.5 km east of Kawene							
Property Name		**Access**						
Geological Setting	The Kawene Lake Complex forms one of the numerous Quetico Intrusions, which were emplaced into the Quetico Subprovince near, or within, the margins of the Quetico Batholithic Complex. These mafic to ultramafic intrusions form sills, plugs and small stocks that are composed of a variety of hornblende-rich lithologies ranging from diorite to peridotite.							
Intrusion Age/Era	See miscellaneous notes.							
Geophysical Surveys								
Recent mapping	OGS Maps 2065[1], 2405[2]							
Morphology	Dike							
Size of Intrusion	1.7 km by <0.1 km							
Lithologies Present	Hornblende gabbro, hornblendite, hornblende clinopyroxenite, and hornblende wehrlite.							
Distribution of Lithologies	Ultramafic >> Mafic							
Metamorphic grade	Amphibolite							
Alteration								
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Turbiditic metasedimentary rocks							
Nature of contact	Intrusive							
Material analyzed	Grab sample*	**Sample Distribution**	4 samples					
Geochemical Characteristics: Please refer to figures 11, 12 and 13.								
Chemical affinity	Alkalic[3]							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.82-1.12	**Median**	0.93	**Average**	0.95	**Number of Samples**	4
Pt + Pd (ppb)	**Range**	4.7-22.7	**Median**	19.6	**Average**	23.8	**Number of Samples**	4
Ni/Cu ratios	**Range**	1.6-9.0	**Median**	4.3	**Average**	4.8	**Number of Samples**	4
Total Ni (ppm)	**Range**	181-387	**Median**	315	**Average**	300	**Number of Samples**	4
Total Cu (ppm)	**Range**	43-114	**Median**	82	**Average**	80	**Number of Samples**	4
Total sulphur (wt %)	**Range**	0.04-0.20	**Median**	0.10	**Average**	0.11	**Number of Samples**	4
Anomalies								
Hypothetical Source Region	Water-rich metasomatized mantle							
Tectonic Setting								
Mineralization Type	Type I							
Potential for exploration	3 (High PGE values, mineralization present in belt, however intrusions are small in size)							

MISCELLANEOUS NOTES:

This intrusion is a poorly exposed dike-like body. A large portion of this body is covered by Kawene Lake. This intrusion is composed of medium- to coarse-grained hornblende gabbro, hornblendite, hornblende clinopyroxenite, and hornblende wehrlite. Ultramafic rocks are the dominant rock type. Porphyritic gabbroic rocks occur in 10 to 30 m, narrow zones along the northern contact of the intrusion. Contacts within the intrusion are gradational. Evidence for a narrow, contact metamorphic aureole was observed in a few outcrops containing biotite-quartz hornfels.[4] See reference for details.

The Quetico intrusions are hosted in turbiditic greywackes (<2696 Ma)[5] and are cut by granitic dykes of 2670-2665 Ma[6].

**samples courtesy of Keiko Hattori, University of Ottawa*

REFERENCES:

[1] Pye, E.G. and Fenwick, K.G. 1965. Atikokan-Lakehead sheet, Geological Compilation Series, Kenora, Rainy River and Thunder Bay Districts; Ontario Geological Survey, Map 2065, scale 1:253 440.
[2] Pirie, J. 1978. Crooked Pine Lake, Rainy River District; Ontario Geological Survey, Map 2405, scale 1:31 680.
[3] Lassen, B., Hattori, K. and Percival, J. 2000. Mineralogy and geochemistry of Archean alkaline intrusions from the western Superior Province; *in* Lithoprobe Western Superior Transect, Sixth Annual Workshop, LithoProbe Report 77, p.70-74.
[4] MacTavish, A.D. 1999. The Mafic-Ultramafic Intrusions of the Atikokan-Quetico Area, Northwestern Ontario; Ontario Geological Survey, Open File Report 5997, 127p.
[5] Davis, D.W. and Corfu, F. 1995. Correlations and contrasts among Superior Province terranes from U-Pb geochronology and Hf isotopes; International Union of Tectonics and Metallogeny of Early/Mid Precambrian orogenic belts, Precambrian 95, Program and Abstracts, p.34.
[6] Percival, J.A. and Sullivan, R.W. 1988. Age constraints on the origin of the Quetico belt, Superior Province, Canada; *in* Radiogenic and Isotopic Studies, Report 2, Geological Survey of Canada, Paper 88-2, p.97-107.

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Pirie, J. 1978. Geology of the Crooked Pine Lake Area, Rainy River District, Ontario; Ontario Geological Survey, Report 179, 73p. (includes Map 2405).

Intrusion Number	OTH-033		**Intrusion Name**	Abiwin Lake				
Township/Area	Trottier, Weaver		**Resident Geologist District**	Thunder Bay South				
Location Description	Intrusion straddles the boundary between Trottier and Weaver Townships, near the north shore of a small, unnamed lake approximately 37 km east of Atikokan, 2.4 km west of Abiwin Station.							
Property Name							**Access**	Road
Geological Setting	The Abiwin Intrusion forms one of the numerous Quetico Intrusions, which were emplaced into the Quetico Subprovince near, or within, the margins of the Quetico Batholithic Complex. These mafic to ultramafic intrusions form sills, plugs and small stocks that are composed of a variety of hornblende-rich lithologies ranging from diorite to peridotite.							
Intrusion Age/Era	See miscellaneous notes.							
Geophysical Surveys								
Recent mapping	OGS Maps 2065[1], 2405[2]							
Morphology	Elliptical in plan							
Size of Intrusion	0.6 km by 0.3 km							
Lithologies Present	Pyroxenite, hornblendite, wehrlite, and monzodiorite/diorite.							
Distribution of Lithologies	Ultramafic >> Mafic							
Metamorphic grade	Amphibolite							
Alteration								
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Turbiditic metasedimentary rocks							
Nature of contact	Intrusive							
Material analyzed	Grab sample*			**Sample Distribution**	2 samples			
Geochemical Characteristics: Please refer to figures 11, 12 and 13.								
Chemical affinity	Alkalic[3]							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.66-0.78	**Median**	0.72	**Average**	0.72	**Number of Samples**	2
Pt + Pd (ppb)	**Range**	21.1-39.9	**Median**	30.5	**Average**	30.5	**Number of Samples**	2
Ni/Cu ratios	**Range**	0.48-0.50	**Median**	0.49	**Average**	0.49	**Number of Samples**	2
Total Ni (ppm)	**Range**	836-838	**Median**	837	**Average**	837	**Number of Samples**	2
Total Cu (ppm)	**Range**	1691-1726	**Median**	1709	**Average**	1709	**Number of Samples**	2
Total sulphur (wt %)	**Range**	0.40-1.00	**Median**	0.70	**Average**	0.70	**Number of Samples**	2
Anomalies	Up to 2.04% Cu, 0.24% Ni, 720 ppb Pt, and 45 to 650 ppb Pd. One sample is reported to have 2.20% Cu, 0.08% Ni, 39,500 ppb Pt, and 3.75 ppm Pd.[4]							
Hypothetical Source Region	Water-rich metasomatized mantle							
Tectonic Setting								
Mineralization Type	Type I							
Potential for exploration	3 (High PGE values, mineralization present in belt, however intrusions are small in size)							

MISCELLANEOUS NOTES:

The Abiwin intrusion includes two main units composed of sheared altered feldspathic hornblendite to hornblendite and hornblende gabbro to hornblende melagabbro. The ultramafic rocks are massive, medium- to coarse-grained, and occasionally contain interstitial plagioclase. The mafic rocks are fine- to medium-grained, generally massive to hornblende porphyritic, and locally display igneous foliation. The contacts between the two main units are generally sharp, but within each unit, the contacts are irregular and gradational. The contact between the intrusion and country rock is sharp and undulatory.[4] See reference for details.

The Quetico intrusions are hosted in turbiditic greywackes (<2696 Ma)[5] and are cut by granitic dykes of 2670-2665 Ma[6].

**samples courtesy of Keiko Hattori, University of Ottawa*

REFERENCES:

[1] Pye, E.G. and Fenwick, K.G. 1965. Atikokan-Lakehead sheet, Geological Compilation Series, Kenora, Rainy River and Thunder Bay Districts; Ontario Geological Survey, Map 2065, scale 1:253 440.
[2] Pirie, J. 1978. Crooked Pine Lake, Rainy River District; Ontario Geological Survey, Map 2405, scale 1:31 680.
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[4] MacTavish, A.D. 1999. The Mafic-Ultramafic Intrusions of the Atikokan-Quetico Area, Northwestern Ontario; Ontario Geological Survey, Open File Report 5997, 127p.
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Pirie, J. 1978. Geology of the Crooked Pine Lake Area, Rainy River District, Ontario; Ontario Geological Survey, Report 179, 73p. (includes Map 2405).

Intrusion Number	OTH-034	**Intrusion Name**	Mud Lake
Township/Area	Weaver	**Resident Geologist District**	Thunder Bay South
Location Description	About 40 km east of Atikokan, 1 km north of the northwest arm of Elbow Lake, and 0.5 km south of Crooked Pine Lake.		
Property Name		**Access**	Road
Geological Setting	The Mud Lake Intrusion forms one of the numerous Quetico Intrusions, which were emplaced into the Quetico Subprovince near, or within, the margins of the Quetico Batholithic Complex. These mafic to ultramafic intrusions form sills, plugs and small stocks that are composed of a variety of hornblende-rich lithologies ranging from diorite to peridotite.		
Intrusion Age/Era	See miscellaneous notes.		
Geophysical Surveys			
Recent mapping	OGS Maps 2065[1], 2405[2]		
Morphology	Comma shaped		
Size of Intrusion	800 m by 10 to 100 m		
Lithologies Present	Clinopyroxenite, feldspathic hornblendite, hornblendite, and clinopyroxene hornblendite, with subordinate amounts of appinitic diorite and hornblende gabbro.[3]		
Stratigraphic Sequence	Ultramafic >> Mafic		
Metamorphic grade	Amphibolite		
Alteration			
Structure-Texture			
Magma Dynamics			
Characteristic Mineralogy			
Crystallization Sequence			
Host rock	Turbiditic metasedimentary rocks		
Nature of contact	Intrusive		
Material analyzed	Grab sample*	**Sample Distribution**	2 samples

Geochemical Characteristics: Please refer to figures 11, 12 and 13.

Chemical affinity	Alkalic[4]							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	1.55	**Median**	1.55	**Average**	1.55	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	1.63	**Median**	1.63	**Average**	1.63	**Number of Samples**	1
Ni/Cu ratios	**Range**	0.57-0.98	**Median**	0.78	**Average**	0.78	**Number of Samples**	2
Total Ni (ppm)	**Range**	89-129	**Median**	109	**Average**	109	**Number of Samples**	2
Total Cu (ppm)	**Range**	132-155	**Median**	144	**Average**	144	**Number of Samples**	2
Total sulphur (wt %)	**Range**	0.12-0.17	**Median**	0.15	**Average**	0.15	**Number of Samples**	2

Anomalies	33 to 3430 ppb Pt, 50 to 525 ppb Pd, up to 8 g/ton Ag, 0.07% Ni, and 0.21 to 5.12% Cu.[3]
Hypothetical Source Region	Water-rich metasomatized mantle
Tectonic Setting	
Mineralization Type	Type I
Potential for exploration	3 (High PGE values, mineralization present in belt, however intrusions are small in size).

MISCELLANEOUS NOTES:

The Mud Lake intrusion is composed of a lower ultramafic unit and an upper intermediate unit. The main ultramafic mass contains massive to weakly layered feldspathic hornblendite, hornblendite, and clinopyroxene hornblendite, with lesser amounts of appinitic diorite and hornblende gabbro adjacent to the western and northwestern contacts. The dike-like tail is composed of a lower unit of porphyritic hornblende melagabbro, feldspathic hornblendite, and hornblendite, displaying weakly to well-defined modal layering, and an upper unit of massive, appinitic diorite. The upper unit appears to be continuous with rocks occurring along the western contacts of the main ultramafic mass. Sulphide mineralization is characterized by finely disseminated pyrrhotite, pyrite, and chalcopyrite with local concentrations up to 15% sulphide minerals occuring in pegmatite veins. One significant Cu-Ni-PGE-bearing sulphide mineralization occurring at the surface is located in a shallow trench on Discovery Island. Drill core data reveal a continuous PGE- and base metal-rich zone containing 12-30% disseminated, net-textured, stringered, and semi-massive pyrrhotite, chalcopyrite, pentlandite, and some pyrite that extends west of Discovery Island for more than 350 m.[3] See reference for details.

The Quetico intrusions are hosted in turbiditic greywackes (<2696 Ma)[5] and are cut by granitic dykes of 2670-2665 Ma[6].

**samples courtesy of Keiko Hattori, University of Ottawa*

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[1]Pye, E.G. and Fenwick, K.G. 1965. Atikokan-Lakehead sheet, Geological Compilation Series, Kenora, Rainy River and Thunder Bay Districts; Ontario Geological Survey, Map 2065, scale 1:253 440.

[2] Pirie. J. 1978. Crooked Pine Lake, Rainy River District; Ontario Geological Survey, Map 2405, scale 1:31 680.

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Intrusion Number	OTH-035	**Intrusion Name**	North Elbow Lake					
Township/Area	Weaver	**Resident Geologist District**	Thunder Bay South					
Location Description	2.4 km south of east end of Crooked Pine Lake							
Property Name		**Access**						
Geological Setting	The North Elbow Lake Intrusion forms one of the numerous Quetico Intrusions, which were emplaced into the Quetico Subprovince near, or within, the margins of the Quetico Batholithic Complex. These mafic to ultramafic intrusions form sills, plugs and small stocks that are composed of a variety of hornblende-rich lithologies ranging from diorite to peridotite.							
Intrusion Age/Era	See miscellaneous notes.							
Geophysical Surveys								
Recent mapping	OGS Maps 2065[1], 2405[2]							
Morphology	Dike, sill, batholith, etc.							
Size of Intrusion	0.8 km by 0.01 km							
Lithologies Present	Hornblende-gabbro, hornblendite, gabbro, pyroxenite, leucogabbro, hornblende-pyroxenite and diorite.[3]							
Distribution of lithologies	Ultramafic							
Metamorphic grade	Amphibolite							
Alteration								
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Turbiditic metasedimentary rocks							
Nature of contact	Intrusive							
Material analyzed	Grab sample*	**Sample Distribution**	2 samples					
Geochemical Characteristics: Please refer to figures 11, 12 and 13.								
Chemical affinity	Alkalic[3]							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.89-1.25	**Median**	1.07	**Average**	1.07	**Number of Samples**	2
Pt + Pd (ppb)	**Range**	4.8-11.7	**Median**	8.3	**Average**	8.3	**Number of Samples**	2
Ni/Cu ratios	**Range**	0.87-1.7	**Median**	1.30	**Average**	1.30	**Number of Samples**	2
Total Ni (ppm)	**Range**	265-301	**Median**	283	**Average**	283	**Number of Samples**	2
Total Cu (ppm)	**Range**	175-303	**Median**	239	**Average**	239	**Number of Samples**	2
Total sulphur (wt %)	**Range**	0.24-0.47	**Median**	0.36	**Average**	0.36	**Number of Samples**	2
Anomalies								
Hypothetical Source Region	Water-rich metasomatized mantle							
Tectonic Setting	Uncertain[4]							
Mineralization Type	Unknown							
Potential for exploration	3 (High background PGE numbers, mineralization present in belt, however intrusions are small in size)							

MISCELLANEOUS NOTES:

The North Elbow Lake stock is well exposed and measures 1900 m by 1500 m and is much better exposed than the South Elbow Lake stock. This segment is crudely zoned and contains an irregular core of porphyritic hornblende clinopyroxenite, clinopyroxene hornblendite, hornblendite and some slightly feldspathic hornblendite partially surrounded by an envelope of commonly porphyritic, feldspathic hornblendite (locally) that locally displays weak layering. The core is also composed of isolated zones of hornblende websterite containing significant amounts of clinopyroxene and orthopyroxene. The ultramafic rocks are interpreted by some authors to be cumulates that were later intruded by massive, non-cumulate, more normally textured hornblende gabbro and diorite. The diorite is frequently hybridized and contains abundant variably assimilated, hornfelsic, metasedimentary xenoliths. The gabbro and diorite also consist of numerous partially resorbed autoliths that are derived from the earlier ultramafic phases of the intrusion. Porphyritic and appinitic textures are very common throughout the northern segment especially within the feldspathic hornblendite phases, and all the ultramafic rock types are characterized by large oikocrysts of hornblende. The contact between the intrusive rocks and the metasediments is undulatory and irregular in appearance. The northern and southern segments may represent two different levels of exposure of the intrusion. The exposed northern portion possibly represents deeper levels than the southern portion. The southern segment may be closer to the roof of this intrusion where assimilation of country rocks has given rise to a more granitoid aspect. The northern segment exhibits a pronounced contact metamorphic aureole with well-developed hornfelsic textures overprinted by later regional metamorphism. This aureole is not observed around the southern segment. PGE or base metal-rich sulphide concentrations have not been observed in this intrusion. Sulphide concentrations are usually significantly less than 1%, and rarely up to 3%, and are characterized by finely disseminated pyrrhotite and pyrite.[5]

The Quetico intrusions are hosted in turbiditic greywackes (<2696 Ma)[6] and are cut by granitic dykes of 2670-2665 Ma[7].

**samples courtesy of Keiko Hattori, University of Ottawa*

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[1] Pye, E.G. and Fenwick, K.G. 1965. Atikokan-Lakehead sheet, Geological Compilation Series, Kenora, Rainy River and Thunder Bay Districts; Ontario Geological Survey, Map 2065, scale 1:253 440.

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[5] MacTavish, A.D. 1999. The mafic-ultramafic intrusions of the Atikokan-Quetico area, northwestern Ontario; Ontario Geological Survey, Open File Report 5997, 127p.

[6] Davis, D.W. and Corfu, F. 1995. Correlations and contrasts among Superior Province terranes from U-Pb geochronology and Hf isotopes; International Union of Tectonics and Metallogeny of Early/Mid Precambrian orogenic belts, Precambrian 95, Program and Abstracts, p.34.

[7] Percival, J.A. and Sullivan, R.W. 1988. Age constraints on the origin of the Quetico belt, Superior Province, Canada; *in* Radiogenic and Isotopic Studies, Report 2, Geological Survey of Canada, Paper 88-2, p.97-107.

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Percival, J.A. 1988. Geology, Quetico, Ontario-United States; Geological Survey of Canada, Map 1682A scale 1:250 000.

Intrusion Number	OTH-035	**Intrusion Name**	South Elbow Lake					
Township/Area	Weaver	**Resident Geologist District**	Thunder Bay South					
Location Description	2.4 km south of east end of Crooked Pine Lake							
Property Name		**Access**						
Geological Setting	The South Elbow Lake Intrusion forms one of the numerous Quetico Intrusions, which were emplaced in the Quetico Subprovince near, or within, the margins of the Quetico Batholithic Complex. These mafic to ultramafic intrusions form sills, plugs and small stocks that are composed of a variety of hornblende-rich lithologies ranging from diorite to peridotite.							
Intrusion Age/Era	See miscellaneous notes.							
Geophysical Surveys								
Recent mapping	OGS Maps 2065[1], 2405[2]							
Morphology	Dike, sill, batholith, etc.							
Size of Intrusion	0.8 km by 0.01 km							
Lithologies Present	Gabbro, clinopyroxenite							
Stratigraphic Sequence	Ultramafic							
Metamorphic grade	Amphibolite							
Alteration								
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Turbiditic metasedimentary rocks							
Nature of contact	Intrusive							
Material analyzed	Grab sample*	**Sample Distribution**	1 sample					
Geochemical Characteristics: Please refer to figures 11, 12 and 13.								
Chemical affinity	Alkalic[3]							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	1.53	**Median**	1.53	**Average**	1.53	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	3.7	**Median**	3.7	**Average**	3.7	**Number of Samples**	1
Ni/Cu ratios	**Range**	1.60	**Median**	1.60	**Average**	1.60	**Number of Samples**	1
Total Ni (ppm)	**Range**	83	**Median**	83	**Average**	83	**Number of Samples**	1
Total Cu (ppm)	**Range**	52	**Median**	52	**Average**	52	**Number of Samples**	1
Total sulphur (wt %)	**Range**	0.06	**Median**	0.06	**Average**	0.06	**Number of Samples**	1
Anomalies								
Hypothetical Source Region	Water-rich metasomatized mantle							
Tectonic Setting								
Mineralization Type	Unknown							
Potential for exploration	3 (High PGE values, mineralization present in belt, however intrusions are small in size)							

MISCELLANEOUS NOTES:

The North Elbow Lake stock is well exposed and measures 1900 m by 1500 m and is much better exposed than the South Elbow Lake stock. This segment is crudely zoned and contains an irregular core of porphyritic hornblende clinopyroxenite, clinopyroxene hornblendite, hornblendite and some slightly feldspathic hornblendite partially surrounded by an envelope of commonly porphyritic, feldspathic hornblendite (locally) that locally displays weak layering. The core is also composed of isolated zones of hornblende websterite containing significant amounts of clinopyroxene and orthopyroxene. The ultramafic rocks are interpreted by some authors to be cumulates that were later intruded by massive, non-cumulate, more normally textured hornblende gabbro and diorite. The diorite is frequently hybridized and contains abundant variably assimilated, hornfelsic, metasedimentary xenoliths. The gabbro and diorite also consist of numerous partially resorbed autoliths that are derived from the earlier ultramafic phases of the intrusion. Porphyritic and appinitic textures are very common throughout the northern segment especially within the feldspathic hornblendite phases, and all the ultramafic rock types are characterized by large oikocrysts of hornblende. The contact between the intrusive rocks and the metasediments is undulatory and irregular in appearance. The northern and southern segments may represent two different levels of exposure of the intrusion. The exposed northern portion possibly represents deeper levels than the southern portion. The southern segment may be closer to the roof of this intrusion where assimilation of country rocks has given rise to a more granitoid aspect. The northern segment exhibits a pronounced contact metamorphic aureole with well-developed hornfelsic textures overprinted by later regional metamorphism. This aureole is not observed around the southern segment. PGE or base metal-rich sulphide concentrations have not been observed in this intrusion. Sulphide concentrations are usually significantly less than 1%, and rarely up to 3%, and are characterized by finely disseminated pyrrhotite and pyrite.[4]

The Quetico intrusions are hosted in turbiditic greywackes (<2696 Ma)[5] and are cut by granitic dykes of 2670-2665 Ma[6].

**sample courtesy of Keiko Hattori, University of Ottawa*

REFERENCES:

[1] Pye, E.G. and Fenwick, K.G. 1965. Atikokan-Lakehead sheet, Geological Compilation Series, Kenora, Rainy River and Thunder Bay Districts; Ontario Geological Survey, Map 2065, scale 1:253 440.

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Intrusion Number	OTH-036		**Intrusion Name**	Shebandowan Mine Area				
Township/Area	Shebandowan		**Resident Geologist District**	Thunder Bay South				
Location Description	3 km west of SW embayment on Upper Shebandowan Lake							
Property Name							**Access**	Road, boat
Geological Setting	Synvolcanic intrusion							
Intrusion Age/Era								
Geophysical Surveys								
Recent mapping	Maps 2263[1], 2622[2], 2623[2], 2624[2], 2625[2], 2626[2], P.3229[3], P.3230[3], 2267[4]							
Morphology								
Size of Intrusion								
Lithologies Present	Dunite, peridotite, wehrlite, melagabbro							
Distribution of Lithologies	Ultramafic > Mafic							
Metamorphic grade	Amphibolite							
Alteration								
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence	Olivine, plagioclase, pyroxene							
Host rocks	Metavolcanics and sediments							
Nature of contact								
Material analyzed	Grab sample		**Sample Distribution**	9 samples				
Geochemical Characteristics: Please refer to figures 14, 15 and 16.								
Chemical affinity	Tholeiitic. Ti, Zr and Y ratios indicate MORB-source							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.89-4.90	**Median**	2.67	**Average**	2.39	**Number of Samples**	9
Pt + Pd (ppb)	**Range**	4.1-590.9	**Median**	24.5	**Average**	176.4	**Number of Samples**	9
Ni/Cu ratios	**Range**	0.19-177.86	**Median**	1.66	**Average**	27.29	**Number of Samples**	9
Total Ni (ppm)	**Range**	36-4547	**Median**	954	**Average**	1378	**Number of Samples**	9
Total Cu (ppm)	**Range**	7-1932	**Median**	127	**Average**	546	**Number of Samples**	9
Total sulphur (wt %)	**Range**	0.01-1.88	**Median**	0.06	**Average**	0.44	**Number of Samples**	9
Anomalies	Highly anomalous (up to 590 ppb Pt+Pd in peridotite pyroxenite)							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Convergent margin – rifted arc							
Mineralization Type	Type I							
Potential for exploration	4 (Differentiated, highly elevated PGE values)							

MISCELLANEOUS NOTES:

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Intrusion Number	OTH 037	**Intrusion Name**	Haines Gabbro
Township/Area	Haines	**Resident Geologist District**	Thunder Bay South
Location Description	West end of Lower Shebandowan Lake		
Property Name		**Access**	Road, boat
Geological Setting	Synvolcanic. Predates Shebandowan Stock.		
Intrusion Age/Era	Archean		
Geophysical Surveys			
Recent mapping	OGS Maps 2065[1], 2663[2], Open File Report 5866[3], Open File Report 5938[4], Geological Report 296[5], Open File Map 229[6]		
Morphology	Rounded in plan view		
Size of Intrusion	3.6 km by 5.75 km		
Lithologies Present	Gabbro, leucogabbro, plagioclase-phyric gabbro, anorthositic gabbro, anorthosites, minor diorite and amphibolites		
Distribution of Lithologies	Mafic		
Metamorphic grade	Greenschist		
Alteration	Pervasive chloritization and tremolite-actinolite replacement of ferromagnesian minerals		
Structure-Texture			
Magma Dynamics			
Characteristic Mineralogy			
Crystallization Sequence			
Host rocks	Metavolcanic and metasedimentary rocks. Flanked by massive granite to the east.		
Nature of contact	Intrusive		
Material analyzed	Grab sample	**Sample Distribution**	17 samples

Geochemical Characteristics: Please refer to figures 14, 15 and 16.

Chemical affinity	Tholeiitic. Mildly enriched to mildly contaminated							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.46-1.10	**Median**	0.84	**Average**	0.82	**Number of Samples**	9
Pt + Pd (ppb)	**Range**	0.9-21.1	**Median**	6.9	**Average**	8.4	**Number of Samples**	11
Ni/Cu ratios	**Range**	0.04-18.23	**Median**	0.69	**Average**	2.90	**Number of Samples**	17
Total Ni (ppm)	**Range**	21-237	**Median**	65	**Average**	87	**Number of Samples**	17
Total Cu (ppm)	**Range**	10-556	**Median**	82	**Average**	100	**Number of Samples**	17
Total sulphur (wt %)	**Range**	0.01-1.32	**Median**	0.03	**Average**	0.13	**Number of Samples**	17

Anomalies	Minor PGE anomalies (21 ppb Pt+Pd in meta-anorthosite)
Hypothetical Source Region	Mildly enriched?
Tectonic Setting	Rifted arc?
Mineralization Type	VIc and V ?
Potential for exploration	3 (Elevated PGE values, moderate sized intrusion, located adjacent to Shebandowan Cu-Ni deposit)

MISCELLANEOUS NOTES:

Two types of mineral occurrences have been recognized in the Haines Gabbroic Complex: 1) sulphide mineralization hosted in actinolite-rich pegmatoid, with individual amphibole crystals up to 45 cm long, and 2) shear-hosted occurrences dominated by actinolite + chlorite + quartz ± epidote schists. In the former, the sulphide minerals (pyrite and chalcopyrite) are late, occurring interstitial to amphiboles and along amphibole cleavage. In the latter, dominant sulphide minerals are pyrite with less abundant chalcopyrite, and minor millerite, sphalerite and galena. Accessory minerals include hessite, gold-silver alloy, melonite, palladium melonite and merenskyite, native silver, and bismuth-tellurides.[6] Examples of the shear-hosted occurrences include the A, C, D, E and Magnetite zones and examples of the pegmatoid-hosted occurrences are the B and Pegmatite zones.[6]

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Intrusion Number	OTH-038			**Intrusion Name**	Crystal Lake			
Township/Area	Pardee, Crooks			**Resident Geologist District**	Thunder Bay South			
Location Description	48 km SSW of Thunder Bay							
Property Name	Great Lakes Nickel Company						**Access**	Road
Geological Setting	Tholeiitic mafic intrusion located in the Mid-Continent Rift							
Intrusion Age/Era	Proterozoic							
Geophysical Surveys								
Recent mapping	OGS Maps 2065[1], 2664[2], 2207[3], P.3139[4]							
Morphology	Y-shaped							
Size of Intrusion	~4.5 km in length							
Lithologies Present	Olivine gabbro, melagabbro, leucogabbro, anorthositic gabbro, gabbronorite, chromitite							
Distribution of Lithologies	Ultramafic = Mafic							
Metamorphic grade								
Alteration								
Structure-Texture	Undeformed, fine- to coarse-grained, intergranular to ophitic and subophitic textures common							
Magma Dynamics								
Characteristic Mineralogy	Plagioclase-clinopyroxene-olivine							
Crystallization Sequence								
Host rocks	Rove Formation shales							
Nature of contact	Intrusive							
Material analyzed	Grab sample		**Sample Distribution**	11 samples				
Geochemical Characteristics: Please refer to figures 20, 21 and 22.								
Chemical affinity	Tholeiitic. Mildly enriched or contaminated.							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	0.72-3.68	**Median**	0.99	**Average**	1.59	**Number of Samples**	10
Pt + Pd (ppb)	**Range**	2.5-136.2	**Median**	9.8	**Average**	23.0	**Number of Samples**	10
Ni/Cu ratios	**Range**	0.30-3.05	**Median**	0.82	**Average**	1.30	**Number of Samples**	11
Total Ni (ppm)	**Range**	33-415	**Median**	93	**Average**	150	**Number of Samples**	11
Total Cu (ppm)	**Range**	17-281	**Median**	136	**Average**	147	**Number of Samples**	11
Total sulphur (wt %)	**Range**	0.01-0.06	**Median**	0.03	**Average**	0.03	**Number of Samples**	11
Anomalies	Anomalous PGE grades in gabbro (136 ppm Pt+Pd)							
Hypothetical Source Region	Mildly enriched mantle or depleted mantle							
Tectonic Setting	Rift							
Mineralization Type	Type I							
Potential for exploration	3 (Low PGE values with some anomalies, good lithologies, reasonable size)							

MISCELLANEOUS NOTES:

The following descriptive summary is from Geul (1970)[1].

Crystal Lake gabbro is located in the eastern portion of Devon and Pardee Townships. This intrusion outcrops mainly as a large Y-shaped body with the open end facing west. The northern leg of this Y-shaped body ranges in width from 457 to 609 m and extends for approximately 5 km in a west-northwest direction. Drill core data indicates that the northern leg is essentially canoe-shaped with a plunge of 15° to 20° E. The southern leg of the Y-shaped body lies north of Crystal Lake, where it has a relatively flat inward dipping basal contact along the southern side and a locally sheared, possibly steeply dipping (?) contact along the northern side, which forms a steep escarpment. The Crystal Lake gabbro consists of three main lithological types: medium-grained olivine gabbro; "pegmatitic" gabbro; and, medium- to fine-grained diabasic gabbro from the basal or chill zone. In addition to these three lithological types, the Crystal Lake gabbro also contains a porphyritic gabbro and a metagabbro.

The medium-grained olivine gabbro is a mesocratic equigranular rock and is most abundant in the upper portions of the Y-shaped intrusion. In outcrop it is characterized by a mottled appearance defined by milky white feldspar grains and black mafic minerals. Olivine is a constituent in the mafic-rich parts but it also commonly occurs as distinct amber coloured grains. Faint igneous lamination is present in the rock that is made up of alternating plagioclase-rich and mafic-rich layers about 2 mm thick. The lamination has a shallow dip, up to 15° E with a decrease in angle towards the top of the intrusion. Thin troctolitic layers occur in the olivine gabbro close to the underlying "pegmatitic" gabbro zone. The "pegmatitic" gabbro is essentially a medium- to coarse-grained, massive gabbro with irregular coarse-grained to very coarse-grained segregations of anorthositic material composed of lath-shaped feldspar crystals forming a subophitic intergrowth with grains of pyroxenes and olivine. Sulphide mineralization in both gabbro and anorthositic patches occur as fine disseminations and as coarse-grained massive blebs up to 2.5 cm across. The mafic constituents usually form as small clots in an anorthositic matrix. The upper portion of the "pegmatitic" gabbro grades into a thick (about 45 m) layered sequence that is characterized by coarse-grained layers at least 0.9 m thick of troctolite with chromite seams (2.5 to 7 cm thick) and bands (at least 1.8 m thick) of coarse-grained "anorthositic" gabbro. This layered sequence separates the "pegmatitic" phase of the intrusive body from the overlying olivine gabbro and is thus an important marker since the "pegmatitic" gabbro hosts the bulk of the sulphide mineralization. The basal zone is generally 3 to 7 m thick and is locally 60 m thick. It is composed of dark, medium- to fine-grained gabbroic rocks that in many places appear to grade downward into aphanitic "chill" material. Sulphide mineralization is uniformly disseminated in the upper portion of the basal zone but its distribution is sparse and sporadic in the lower aphanitic "chill" portion. The lower aphanitic "chill" material is also characterized by the local occurrence of massive pyrrhotite stringers and zones near the lower contact of the intrusion and are associated with sedimentary inclusions and "hybrid" rocks. The massive pyrrhotite stringers are up to 15 cm wide but are commonly 5 cm wide and the near-massive pyrrhotite zones are up to 0.6 to 0.9 m thick. The aphanitic "chill" material is a massive, nearly black rock consisting of randomly oriented microlites of feldspar and if altered biotite crystals.

The relationship of the porphyritic gabbro to other rocks of the Crystal Lake intrusion and its mode of occurrence are unknown. The porphyritic gabbro occurs in the central and deeper portions of the intrusion and also as inclusions within a fine-grained lower diabase sill. Typically, this rock contains feldspar megacrysts up to 2 cm across in a dark mafic groundmass consisting of altered pyroxene, olivine, uralite, biotite, some quartz and iron oxide phases. The iron oxide phases may represent a late stage alteration and occur as either subhedral grains or needle-shaped laths up to 2 mm long that appear to cut the silicates. The metagabbro is believed to be associated with the Crystal Lake intrusion because of its mode of occurrence in the southeastern extension and its characteristic habit as an altered phase of the olivine gabbro sensu lato.

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Intrusion Number	OTH-039			**Intrusion Name**	Hele Township Area			
Township/Area	Hele, Stirling, Lyon			**Resident Geologist District**	Thunder Bay South			
Location Description	W of Nipigon Bay, Lake Superior, north of Black Bay 10.5 km							
Property Name	Hele, East-West Resources Corp.						**Access**	Road
Geological Setting								
Intrusion Age/Era	Proterozoic							
Geophysical Surveys								
Recent mapping	OGS Maps 2065^1, 2664^2							
Morphology	Circular magnetic feature							
Size of Intrusion								
Lithologies Present	Websterite, lherzolite, olivine gabbro, wehrlite, clinopyroxenite, gabbro							
Stratigraphic Sequence								
Metamorphic grade	Lower greenschist?							
Alteration								
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Metasedimentary rocks							
Nature of contact					**Strike**		**Dip**	
Material analyzed	Grab sample			**Sample Distribution**	13 samples			
Geochemical Characteristics: Please refer to figures 20, 21 and 22.								
Chemical affinity	Tholeiite. Zr, Ti and Y ratios indicate an enriched source or experienced crustal contamination							
Sulphide (S) saturation	S-saturated and S-undersaturated							
Pd/Pt ratios	**Range**	0.25-4.59	**Median**	0.50	**Average**	0.89	**Number of Samples**	10
Pt + Pd (ppb)	**Range**	6.2-30.4	**Median**	15.2	**Average**	15.9	**Number of Samples**	10
Ni/Cu ratios	**Range**	0.05-4.53	**Median**	0.12	**Average**	0.58	**Number of Samples**	13
Total Ni (ppm)	**Range**	107-1227	**Median**	617	**Average**	593	**Number of Samples**	10
Total Cu (ppm)	**Range**	6-227	**Median**	79	**Average**	97	**Number of Samples**	10
Total sulphur (wt %)	**Range**	0.01-0.03	**Median**	0.02	**Average**	0.02	**Number of Samples**	10
Anomalies	Mildly anomalous. Good overall PGE values							
Hypothetical Source Region	Metasomatized source or depleted mantle source with subsequent crustal contamination							
Tectonic Setting	Rift							
Mineralization Type	Unknown							
Potential for exploration	3 (Good overall PGE values, similarities with Wolf Mountain (Leckie Lake), more work required)							

MISCELLANEOUS NOTES:

Olivine-rich ultramafic rocks are found in outcrops. These rocks are surrounded and partly covered by an olivine-pyroxene-rich diabase (Logan Sill). Ground magnetic and IP surveys outlined chargeable zones at depth and a circular magnetic low feature outlining low magnetic susceptibility ultramafic rocks. The geochemical trends mimic that of the Seagull-Wolf Mountain intrusion.

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Intrusion Number	OTH-040		**Intrusion Name**	Seagull Intrusion-Wolf Mountain				
Township/Area	Leckie Lake Area		**Resident Geologist District**	Thunder Bay South				
Location Description	~50 km west of Nipigon							
Property Name	Seagull-Disraeli, East West Resources Corp.						**Access**	Road
Geological Setting	Rift-related Proterozoic intrusion into Sibley sediments							
Intrusion Age/Era	Proterozoic							
Geophysical Surveys								
Recent mapping	OGS Maps 2065[1], 2102[2], 2232[3], 2664[4], P.0462[5], P.0463[6]							
Morphology	Rounded		**Strike**				**Dip**	
Size of Intrusion	~10 km diameter							
Lithologies Present	Dunite, peridotite, wehrlite, lherzolite, melagabbro, mesogabbro, olivine gabbro, quartz gabbro							
Stratigraphic Sequence	Ultramafic = Mafic							
Metamorphic grade	Greenschist							
Alteration	Weak to pervasive chlorite, serpentine and sericite alteration							
Structure-Texture	Magmatic layering		**Strike**				**Dip**	
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Sibley sediments							
Nature of contact	Intrusive				**Strike**		**Dip**	
Material analyzed	Drill core*		**Sample Distribution**					
Geochemical Characteristics: Please refer to figures 20, 21 and 22.								
Chemical affinity	Tholeiitic. Enriched or crustal contamination							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.30-6.36	**Median**	0.94	**Average**	1.21	**Number of Samples**	31
Pt + Pd (ppb)	**Range**	2.5-1392.3	**Median**	26.4	**Average**	86.7	**Number of Samples**	34
Ni/Cu ratios	**Range**	0.30-3.05	**Median**	0.82	**Average**	1.30	**Number of Samples**	11
Total Ni (ppm)	**Range**	3-1761	**Median**	1200	**Average**	970	**Number of Samples**	36
Total Cu (ppm)	**Range**	8-3329	**Median**	37	**Average**	190	**Number of Samples**	36
Total sulphur (wt %)	**Range**	0.02-1.78	**Median**	0.12	**Average**	0.18	**Number of Samples**	36
Anomalies	Up to 1392 ppb Pt+Pd in lherzolite. High PGE values in general.							
Hypothetical Source Region	Enriched mantle or subsequent crustal contamination							
Tectonic Setting	Rift							
Mineralization Type	Type I							
Potential for exploration	4 (Good overall PGE values, moderate-sized intrusion, potentially larger amount of magma)							

MISCELLANEOUS NOTES:

Seagull is a circular body ~10 km diameter with an outer gabbroic margin surrounding an inner body of ultramafic rocks. Drilling reveals upper granophyric gabbro phases, often pink in colour, followed by magnetic pyroxenitic gabbro-pyroxenite (100-150 m thick), followed by a layer of peridotite to dunite (550-600 m thick), overlying lower gabbro-pyroxenite (lherzolite) that hosts the sulphides (50-80 m thick). Sulphides include pyrrhotite, pentlandite, cubanite and chalcopyrite[7].

**Drill core kindly provided by East West Resources Corp.*

REFERENCES:

[1] Pye, E.G. and Fenwick, K.G. 1965. Atikokan-Lakehead sheet, Geological Compilation Series, Kenora, Rainy River and Thunder Bay Districts; Ontario Geological Survey, Map 2065, scale 1:253 440.

[2] Pye, E.G., Harris, F.R., Fenwick, K.G. and Baillie, J. 1966. Tashota-Geraldton sheet, Geological Compilation Series, Thunder Bay and Cochrane Districts; Ontario Geological Survey, Map 2102, scale 1:253 440.

[3] Carter, M.W., McIlwaine, W.H. and Wisbey, P.A. 1973. Nipigon-Schreiber, Geological Compilaton Series, Thunder Bay District; Ontario Geological Survey, Map 2232, scale 1:253 440.

[4] Santaguida, F. 2001. Precambrian Geological Compilation Series–Thunder Bay sheet; Ontario Geological Survey, Map 2664, scale 1:250 000.

[5] Coates, M.E. 1968. Black Sturgeon Lake Area (West Half), District of Thunder Bay; Ontario Geological Survey, Preliminary Map P.0462, scale 1:63 360.

[6] Coates, M.E. 1968. Black Sturgeon Lake Area (East Half), District of Thunder Bay; Ontario Geological Survey, Preliminary Map P.0463, scale 1:63 360.

[7] Canadian Institute of Mining and Metallurgy and Petroleum, 2001. Intrusions of the Nipigon Basin, Field Trip 5, September 18, 2001; *in* Superior PGE 2001, CIM Geological Society Field Conference.

Intrusion Number	OTH-041	**Intrusion Name**	Buck Lake					
Township/Area	Lac des Iles area	**Resident Geologist District**	Thunder Bay South					
Location Description	100 km NW of Thunder Bay and 28 km WSW of Lac des Iles							
Property Name	Buck Lake, Buck Lake Ventures Ltd.	**Access**	Road					
Geological Setting	Syn to post-tectonic intrusion intruding granitoids. Part of Lac des Isles group of intrusions.							
Intrusion Age/Era	2692 Ma (Davis *in* Blackburn et al.; Table 9.10)[1]							
Geophysical Surveys								
Recent mapping	OGS Maps 2065[2] and 2199[3]							
Morphology	Elliptical stock	**Strike**		**Dip**				
Size of Intrusion	5 km x 2 km							
Lithologies Present	Hornblende-gabbro, gabbronorite, clinopyroxenite, hornblende-clinopyroxenite, and minor leucocratic phases							
Stratigraphic Sequence								
Metamorphic grade	Greenschist							
Alteration	Intermediate sericitization and tremolite-actinolite replacement of ferromagnesian minerals							
Structure-Texture		**Strike**		**Dip**				
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Granitoids							
Nature of contact		**Strike**		**Dip**				
Material analyzed	Grab sample	**Sample Distribution**	10 samples					
Geochemical Characteristics: Please refer to figures 6, 8 and 10.								
Chemical affinity	Tholeiitic. Ti, Zr and Y ratios indicate a mantle source region more enriched than MORB (similar to E-MORB).							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	0.81-2.22	**Median**	1.24	**Average**	1.36	**Number of Samples**	8
Pt + Pd (ppb)	**Range**	5.8-3962.0	**Median**	27.4	**Average**	897.8	**Number of Samples**	8
Ni/Cu ratios	**Range**	1.31-60.88	**Median**	5.09	**Average**	11.97	**Number of Samples**	10
Total Ni (ppm)	**Range**	5-6036	**Median**	354	**Average**	1243	**Number of Samples**	10
Total Cu (ppm)	**Range**	3-3286	**Median**	39	**Average**	645	**Number of Samples**	10
Total sulphur (wt %)	**Range**	0.04-1.96	**Median**	0.14	**Average**	0.49	**Number of Samples**	10
Anomalies	Up to 3962 ppb Pt+Pd in metapyroxenite and metamelagabbro							
Hypothetical Source Region	Metasomatized mantle (lithospheric?)							
Tectonic Setting	Mature convergent margin							
Mineralization Type	Type I and Type IV							
Potential for exploration	4 (several high PGE values obtained, elevated overall PGE values in general, similarities with Lac des Isles)							

MISCELLANEOUS NOTES:

The Buck Lake intrusion or Buck Lake stock is located approximately 100 km northwest of Thunder Bay. It is one of several mafic to ultramafic intrusions in the Lac des Iles area that form a roughly 30 km wide circular structure informally termed "the ring of fire". The intrusion outcrops mainly along the north shore of Buck Lake and forms an elliptical shaped stock approximately 5 km by 2 km.[4]

Hornblende gabbro is the dominant lithology and may contain local pegmatitic patches with biotite and quartz. Gabbronorite, clinopyroxenite, and hornblende clinopyroxenite are also common lithologies, as well as breccia zones where leucocratic phases intrude more melanocratic phases.[5]

Significant Cu-Ni-PGE mineralization has been reported from a series of lenticular southeast trending mineralized sections of the intrusion. These mineralized sections are located in the vicinity of the north shore of Buck Lake. Best reported assays from this area include: 4.8 g/t Pd, 2.9 g/t Pt, 0.6 g/t Au, 5.8 g/t Ag, 0.02% Co, 0.9% Cu, and 0.9% Ni (from mineralized pyroxenite breccia); and 1.3 g/t Pd, 0.7 g/t Pt, 0.6 g/t Au, 2.4 g/t Ag, 0.01% Co, 0.2% Cu, and 0.4% Ni (from mineralized pyroxenite; Buck Lake Ventures Ltd., News Release, August 8, 2000; and Schnieders et al. [4]).

Note: The age of the Buck Lake intrusion/Buck Lake stock and other similar intrusions in the informally termed "ring of fire" – Lac des Iles area are assumed to be equivalent in age to the Lac des Iles intrusion (2692 Ma[1]).

REFERENCES:

[1] Blackburn, C.E., Johns, G.W., Ayer, J. and Davis, D.W. 1991. Wabigoon Subprovince; *in* Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 1, p. 303-381.

[2] Pye, E.G. and Fenwick, K.G. 1965. Atikokan-Lakehead sheet, geological compilation series, Kenora, Rainy River and Thunder Bay districts; Ontario Division of Mines, Map 2065, scale 1:253 440.

[3] Ayres, L.D., Lumbers, S.B., Milne, V.G. and Robeson, D.W. 1971. Ontario Geological Map, West Central Sheet; Ontario Department of Mines and Northern Affairs, Map 2199, scale 1:1 013 760.

[4] Schnieders, B.R., Scott, J.F., Smyk, M.C., O'Brien, M.S., Debicki, R. and Drost, A. 2001. Report of Activities 2000, Resident Geologist Program, Thunder Bay South Regional Resident Geologist Report: Thunder Bay South District; Ontario Geological Survey, Open File Report 6049, 64p.

[5] Sutcliffe, R.H. 1986. Regional Geology of the Lac des Iles area, District of Thunder Bay; *in* Summary of Field Work and Other Activities 1986, Ontario Geological Survey, Miscellaneous Paper 132, p.70-75.

OTHER REFERENCES:

Jolliffe, F. 1934. Block Creek Map Area, Thunder Bay District, Ontario; Geological Survey of Canada, Summary Report 1933, part D, p.7-15.
Kaye, L. 1964. Dog River Road Area, District of Thunder Bay; Ontario Department of Mines, Preliminary Map P.251, scale 1:126 720.
Kaye, L. 1968. Geology of the Eayrs Lake-Starnes Lake area; Ontario Department of Mines, Report 77, 29p.
Pye, E.G. 1968. Geology of the Lac des Iles Area; Ontario Department of Mines, Report 64, 47p.
Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M. and Robertson, D. 1974. Operation Ignace-Armstrong, Obonga Lake-Lac des Iles Sheet, District of Thunder Bay; Ontario Division of Mines, Preliminary Map P.963, scale 1:126 720.
Sutcliffe, R.H. and Sweeney, J.M. 1985. Geology of the Lac des Iles Complex, District of Thunder Bay; *in* Summary of Field Work 1985, Ontario Geological Survey, Miscellaneous Paper 126, p.47-53.
Macdonald, A.J. and Cherry, M.E. 1988. The Platinum Group of Elements in Ontario; Ontario Geological Survey, Open File Report 5681, 279p.

Intrusion Number	OTH-042		**Intrusion Name**	Tib Lake				
Township/Area	Armistice Lake Area		**Resident Geologist District**	Thunder Bay South				
Location Description	W of Lake Nipigon							
Property Name	Houston Lake Mining Inc.						**Access**	
Geological Setting	Syn- to post-tectonic, coeval with late felsic plutonism. Located in the Bo Lake-Heaven Lake belt along with Lac des Iles Complex.							
Intrusion Age/Era	2692 Ma (Davis *in* Blackburn et al.; Table 9.10)[1]							
Geophysical Surveys								
Recent mapping	OGS Map 2065[2]							
Morphology	Funnel shaped			**Strike**			**Dip**	
Size of Intrusion	6.4 km x 4.9 km with surface area of 25 sq. km							
Lithologies Present	Hornblende gabbronorite, olivine melagabbronorite, orthopyroxenite, websterite, gabbro, gabbronorite, leucogabbronorite, anorthosite							
Stratigraphic Sequence								
Metamorphic grade	Greenschist							
Alteration	Weak to pervasive chloritization and sericitization. Also hydrous silicate alteration phases mainly associated with mineralization in the border zone.							
Structure-Texture	Modally layered			**Strike**			**Dip**	
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence	Clinopyroxene-plagioclase-orthopyroxene-olivine-magnetite-apatite							
Host rocks	Foliated tonalite							
Nature of contact						**Strike**		**Dip**
Material analyzed	Drill core*		**Sample Distribution**	17 samples from lower section of intrusion				
Geochemical Characteristics: Please refer to figures 6, 8 and 10.								
Chemical affinity	Tholeiitic. Zr and Y ratios indicate a mantle source region more enriched than MORB (similar to E-MORB)							
Sulphide saturation	Mostly S-undersaturated							
Pd/Pt ratios	**Range**	0.88-3.09	**Median**	1.86	**Average**	2.00	**Number of Samples**	13
Pt + Pd (ppb)	**Range**	2.6-2145.1	**Median**	49.5	**Average**	247.4	**Number of Samples**	14
Ni/Cu ratios	**Range**	0.33-46.30	**Median**	2.24	**Average**	7.61	**Number of Samples**	17
Total Ni (ppm)	**Range**	50-4015	**Median**	516	**Average**	720	**Number of Samples**	17
Total Cu (ppm)	**Range**	27-2734	**Median**	68	**Average**	307	**Number of Samples**	17
Total sulphur (wt %)	**Range**	0.02-0.97	**Median**	0.08	**Average**	0.17	**Number of Samples**	17
Anomalies	Up to 2145 ppb Pt+Pd in pyroxenite							
Hypothetical Source Region	Metasomatized mantle (lithospheric?)							
Tectonic Setting	Mature convergent margin							
Mineralization Type	Type I and Type IV							
Potential for exploration	4 (good background PGE numbers, high PGE analyses, similarities with Lac des Isles)							

MISCELLANEOUS NOTES:

The Tib Lake intrusion is divided into four zones on the basis of observed lithologic characteristics: 1) a border zone, 2) the lower zone, 3) the middle zone, and 4) the upper zone. The border zone consists of coarse-grained to pegmatoidal mafic rocks that form most of the outer margin of the intrusion. The lower zone consists of a weakly layered sequence of gabbro and gabbronorite that grades upwards into a dominantly gabbronorite-hosted sequence with well-developed layers of melagabbronorite, orthopyroxenite, and olivine websterite. The middle zone is similar to the lower zone in strike length and thickness and consists of a gabbronorite to leucogabbronorite base that grades upward into hornblende-bearing gabbro and gabbronorite. The tops of lower and middle zones are both marked by magnetite-bearing gabbronorite. The upper zone is characterized by a mixture of apatite- and hornblende-rich gabbro, quartz gabbro and granulitic rocks.[3]

Ni-Cu-PGE mineralization includes: 1) border zone Ni-Cu-PGE mineralization related to assimilation of S-bearing wall-rock with resultant precipitation of PGE-bearing Cu-Ni sulphides (contact-type); 2) PGE mineralization in the lower zone interpreted to have formed by mixing of two mafic liquids (occurs at "mixed" horizons that mark the contacts between lithologies). Anomalous PGE values were also noted within conformable melanocratic layers within the lower zone.

Note: The age of the Tib Lake intrusion and other similar intrusions in the informally termed "ring of fire" – Lac des Iles area are assumed to be equivalent in age to the Lac des Iles intrusion (2692 Ma[1]).

**Drill core provided courtesy of Houston Lake Mining Inc.*

REFERENCES:

[1] Blackburn, C.E., Johns, G.W., Ayer, J. and Davis, D.W. 1991. Wabigoon Subprovince; *in* Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 1, p. 303-381.
[2] Pye, E.G. and Fenwick, K.G. 1965. Atikokan-Lakehead sheet, geological compilation series, Kenora, Rainy River and Thunder Bay districts; Ontario Division of Mines, Map 2065, scale 1:253 440.
[3] Smith, A.R. 1991. Geology and petrology of the Tib Gabbro; Ontario Geological Survey, Open File Report 5780, 118p.

OTHER REFERENCES:

Smith, A.R. and Sutcliffe, R.H. 1986. Geology of the Tib gabbro, Lac des Iles area, District of Thunder Bay; *in* Summary of Field Work and Other Activities 1986, Miscellaneous Paper 132, p.76-79.
Sutcliffe, R.H. and Sweeney, J.M. 1985. Geology of the Lac des Iles Complex, District of Thunder Bay; *in* Summary of Field Work 1985, Ontario Geological Survey, Miscellaneous Paper 126, p.47-53.
Macdonald, A.J. and Cherry, M.E. 1988. The Platinum group of elements in Ontario; Ontario Geological Survey, Open File Report 5681, 279p.

Intrusion Number	OTH-043	**Intrusion Name**	Ruffo Lake East		
Township/Area	10 km west of Garden Lake	**Resident Geologist District**	Thunder Bay South		
Location Description	Ruffo Lake area				
Property Name		**Access**	Road		
Geological Setting	Small, possibly synvolcanic or Lac des Iles – type (syn- to post-tectonic) intrusions located in the Garden Lake greenstone belt				
Intrusion Age/Era	Neoarchean				
Geophysical Surveys	ERLIS Dataset CD-ROM #1036[1]				
Recent mapping	OGS Maps P.3423[2], 2065[3], 2058[4]				
Morphology	Irregularly shaped in plan view.	**Strike**		**Dip**	
Size of Intrusion	Western intrusion: 3.6 km (in longest direction), 1.5 km (at widest point); Eastern intrusion: approximately 1.5-1.6 km (in longest direction) very irregularly shaped.				
Lithologies Present	Gabbro				
Distribution of Lithologies	Mafic				
Metamorphic grade	Greenschist				
Alteration	Moderate to pervasive carbonate, sericite, and chlorite alteration and silicification.				
Structure-Texture	Igneous layering occurs on the eastern side of both intrusions and is described as consisting of 5 to 8 cm layers of pyroxene-rich and 2 to 4 cm layers of plagioclase-rich bands. These layers strike northeast with apparent northwest dips in both intrusions, however individual layers cannot be traced in either intrusion due to offsets by northwest-trending fractures. The estimated thickness of these layered units is less than 20 meters, with layering occurring within 10 m of the host (mafic metavolcanic) contact area in the eastern intrusion. Layering in the western intrusion, while comparable in thickness, was noted to occur further from the wall rock contact[2]. Both intrusions consist of fine- to medium-grained gabbro with possible vari-textured portions.[2]				
Magma Dynamics					
Characteristic Mineralogy					
Crystallization Sequence					
Host rock	Mafic metavolcanic rocks of the Garden Lake greenstone belt.				
Nature of contact	Intrusive	**Strike**		**Dip**	
Material analyzed	Grab sample	**Sample Distribution**	17 samples		

Geochemical Characteristics: Please refer to figures 6, 8 and 10.

Chemical affinity	Tholeiitic. Zr, Ti and Y ratios suggest a MORB-like source							
Sulphide saturation	Mostly S-undersaturated							
Pd/Pt ratios	**Range**	0.64-1.27	**Median**	0.90	**Average**	0.96	**Number of Samples**	8
Pt + Pd (ppb)	**Range**	5-351	**Median**	51.3	**Average**	84.36	**Number of Samples**	8
Ni/Cu ratios	**Range**	0.25-21.00	**Median**	2.89	**Average**	4.95	**Number of Samples**	17
Total Ni (ppm)	**Range**	42-184	**Median**	134	**Average**	133.29	**Number of Samples**	17
Total Cu (ppm)	**Range**	7-167	**Median**	55	**Average**	69.94	**Number of Samples**	17
Total sulphur (wt %)	**Range**	0.01-0.22	**Median**	0.03	**Average**	0.06	**Number of Samples**	16

Anomalies	Up to 351 ppb Pt+Pd in gabbro
Hypothetical Source Region	Depleted mantle
Tectonic Setting	Rifted arc
Mineralization Type	Unknown
Potential for exploration	3 (Elevated PGE values in general, however intrusion size is relatively small)

MISCELLANEOUS NOTES:

The description that follows is based on Hart (2000).

The spatially associated Ruffo Lake east and Ruffo Lake west intrusions are located east of Garden Lake along the Mooseland River. Approximately 100 meters of mafic metavolcanic rock appears to separate the two intrusions suggesting that they are perhaps one individual body. However, the northwestern contact of the eastern intrusion is fault-bounded with distinct shearing and associated alteration precluding such an interpretation. The intrusions consist dominantly of fine- to medium-grained gabbro with local variations in the pyroxene and plagioclase contents, resulting in irregular zones of more leucocratic composition. Pyroxene is typically metamorphosed to actinolite, hornblende and chlorite, and plagioclase is strongly epidotized, lending a pale green color to hand samples. This pale green color is similar to Lac des Iles and other similar-type intrusions in the area. The gabbroic intrusions also rarely vary to a coarse- to very coarse-grained hornblende-quartz gabbro, found in the southern portions of both intrusions, near the contact with the metavolcanic rocks.

Several minor pyrite-pyrrhotite occurrences are noted on map P.3432 in the western intrusion. These occurrences typically consist of < 1% disseminated anhedral pyrite and appear to be limited to the coarse- to very coarse-grained hornblende-quartz gabbro lenses.

REFERENCES:

[1] Ontario Geological Survey 1999. Single Master Gravity and Aeromagnetic Data for Ontario; Ontario Geological Survey, ERLIS Dataset 1036.
[2] Hart, T.R. 2000. Precambrian geology, Garden Lake area; Ontario Geological Survey, Open File Report 6037, 81p. Accompanied by Preliminary Maps P.3422 and P.3423, scale 1:20 000.

[3] Pye, E.G. and Fenwick, K.G. 1965. Atikokan-Lakehead sheet, geological compilation series, Kenora, Rainy River and Thunder Bay districts; Ontario Division of Mines, Map 2065, scale 1:253 440.

[4] Milne, V.G. 1964. Geology of the Garden Lake area, District of Thunder Bay; Ontario Department of Mines, Geological Report 25, 21p. Accompanied by Map 2058, scale 1:63 360.

Intrusion Number	OTH-044			**Intrusion Name**	Roaring River-Allely Lake			
Township/Area	Mikano			**Resident Geologist District**	Thunder Bay South			
Location Description	Allely Lake							
Property Name							**Access**	Road
Geological Setting	Syn- to post-tectonic intrusion located at the boundary of tonalite and metavolcanic rocks of the Garden Lake belt.							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Map 2442[1]							
Morphology	Elongated			**Strike**			**Dip**	
Size of Intrusion	Surface area of ~ 150-175 sq. km, ~12 km in length x 2-5 km in width							
Lithologies Present	Diorite, monzodiorite, monzonite, quartz-monzonite, granodiorite, gabbro, pyroxenite							
Distribution of Lithologies	Ultramafic << Mafic < Intermediate							
Metamorphic grade								
Alteration	Weak clay-alteration							
Structure-Texture				**Strike**			**Dip**	
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Foliated to gneissic tonalite and metavolcanic rocks of the Garden Lake greenstone belt on NW margin.							
Nature of contact						**Strike**	**Dip**	
Material analyzed	Grab sample			**Sample Distribution**	16 samples from eastern and western sections of intrusion			
Geochemical Characteristics: Please refer to figures 6, 8 and 10.								
Chemical affinity	Calc-alkaline. Zr, Ti and Y ratios are inconclusive.							
Sulphide saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	1.02-7.00	**Median**	2.55	**Average**	3.13	**Number of Samples**	6
Pt + Pd (ppb)	**Range**	0.6-537.0	**Median**	46.6	**Average**	154.9	**Number of Samples**	8
Ni/Cu ratios	**Range**	0.16-13.64	**Median**	0.80	**Average**	2.28	**Number of Samples**	15
Total Ni (ppm)	**Range**	3-1441	**Median**	86	**Average**	204	**Number of Samples**	16
Total Cu (ppm)	**Range**	8-868	**Median**	92	**Average**	195	**Number of Samples**	16
Total sulphur (wt %)	**Range**	0.01-0.81	**Median**	0.16	**Average**	0.22	**Number of Samples**	16
Anomalies	Up to 537 ppb Pt+Pd in gabbronorite and monzogabbro. Overall PGE values are generally low.							
Hypothetical Source Region	Metasomatized source?							
Tectonic Setting	Convergent margin							
Mineralization Type	Type II (potentially Type I – requires further work)							
Potential for exploration	2 (limited mafic components in intrusion)							

MISCELLANEOUS NOTES:

The Roaring River Complex is a composite crescent-shaped intrusion approximately 70 km in length and 1-15 km wide. The intrusion is composed predominantly of diorite, monzodiorite, monzonite, quartz-monzonite and granodiorite. Smaller subordinate gabbroic to pyroxenitic inclusions or pods are present, ranging in size from centimeter to kilometer scale. The Allely Lake mafic intrusion is one such body. Disseminated chalcopyrite, pyrrhotite and pyrite with up to 2.1 g/t Pt+Pd+Au has been found on the eastern side of the Roaring River Complex by Berland Resources Ltd.

REFERENCES:

[1] Breaks, F.W. 1981. Sioux Lookout-Armstrong, geological compilation series, Kenora and Thunder Bay districts; Ontario Geological Survey, Map 2442, scale 1:252 440.

OTHER REFERENCES:

Bedard, L.P., Stern, R.A., Hanson, G.N. and Shirey, S.B. 1990. Petrogenesis of mantle-derived, LILE-enriched Archean monzodiorites and trachyandesites (sanukitoids) in southwestern Superior Province: discussion and reply; Canadian Journal of Earth Sciences, v.27, p.1135-1137.
Dickson, G. and McCrindle, B. 2001. Roaring River Property; www.berlandresources.com/roaring_river.htm
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Stern, R.A. 1989. Petrogenesis of the Archean sanukitoid suite; Unpublished PhD thesis, State University of New York, New York, 291p.
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Stern, R.A., Hanson, G.N. and Shirey, S.B. 1989. Petrogenesis of mantle-derived, LILE-enriched Archean monzodiorites and trachyandesites (sanukitoids) in southwestern Superior Province; Canadian Journal of Earth Sciences, v.26, p.1688-1712.
[2] Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M. and Bowen, R.P. 1974. Operation Ignace-Armstrong, Caribou Lake-Pashkokogan Lake sheet, Thunder Bay, Ontario; Ontario Division of Mines, Preliminary Map P.962, scale 1:126 720.

Intrusion Number	OTH-045			**Intrusion Name**	Logan Sills			
Township/Area	Garden Lake area			**Resident Geologist District**	Thunder Bay South			
Location Description								
Property Name							**Access**	Road
Geological Setting								
Intrusion Age/Era	Proterozoic							
Geophysical Surveys								
Recent mapping	OGS Maps 2065[1], 2442[2], 2664[3]							
Morphology	Sill							
Size of Intrusion								
Lithologies Present	Diabase, quartz-diabase							
Stratigraphic Sequence								
Metamorphic grade								
Alteration	Weak tremolite actinolite							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock of mineralization								
Nature of contact								
Material analyzed	Grab sample			**Sample Distribution**	2 samples from the Garden Lake area			
Geochemical Characteristics: Please refer to figures 20, 21 and 22.								
Chemical affinity	High Fe-tholeiite. Ti, *Zr* and Y ratios indicate MORB-like source.							
Sulphide (S) saturation	S-saturated?							
Pd/Pt ratios	**Range**	1.28-1.95	**Median**	1.62	**Average**	1.62	**Number of Samples**	2
Pt + Pd (ppb)	**Range**	27.1-27.9	**Median**	27.5	**Average**	27.5	**Number of Samples**	2
Ni/Cu ratios	**Range**	0.47-0.53	**Median**	0.50	**Average**	0.50	**Number of Samples**	2
Total Ni (ppm)	**Range**	95-102	**Median**	99	**Average**	99	**Number of Samples**	2
Total Cu (ppm)	**Range**	179-217	**Median**	198	**Average**	198	**Number of Samples**	2
Total sulphur (wt %)	**Range**	0.02-0.08	**Median**	0.05	**Average**	0.05	**Number of Samples**	2
Anomalies	Elevated PGE values							
Hypothetical Source Region	Depleted mantle source (more data required)							
Tectonic Setting	Rift							
Mineralization Type	Unknown							
Potential for exploration	Insufficient data in this study							

MISCELLANEOUS NOTES:

Diabase sills sampled in Garden Lake area.

REFERENCES:

[1] Pye, E.G. and Fenwick, K.G. 1965. Atikokan-Lakehead sheet, Geological Compilation Series, Kenora, Rainy River and Thunder Bay Districts; Ontario Geological Survey, Map 2065, scale 1:253 440.
[2] Breaks, F.W. 1980. Sioux Lookout-Armstrong, Geological Compilation Series, Kenora and Thunder Bay Districts; Ontario Geological Survey, Map 2442, scale 1:253 440.
[3] Santaguida, F. 2001. Precambrian Geological Compilation Series–Thunder Bay sheet; Ontario Geological Survey, Map 2664, scale 1:250 000.

Intrusion Number	OTH-047		**Intrusion Name**	Chrome Lake-Puddy Lake				
Township/Area	Puddy Lake Area		**Resident Geologist District**	Thunder Bay South				
Location Description	3 km west of Obonga Lake							
Property Name							**Access**	Fly-in
Geological Setting	Syn- to post-tectonic intrusion located at junction between paragneisses and greenstone belt							
Intrusion Age/Era	Unknown							
Geophysical Surveys								
Recent mapping	OGS Map 2442[1] and P.416[2]							
Morphology	Crudely lens-shaped			**Strike**			**Dip**	
Size of Intrusion	7 km x 1 km with a surface area of ~7 sq. km							
Lithologies Present	Dunite, Peridotite, Pyroxenite							
Stratigraphic Sequence								
Metamorphic grade	Greenschist							
Alteration	Pervasive serpentinization							
Structure-Texture	Imperfectly known, southern contact is sheared, northern contact commonly displays cataclastic to mylonitic textures							
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence	Olivine (+chromite)							
Host rocks	Volcanogenic metasedimentary rocks along southern margin, quartzofeldspathic paragneisses along northern margin.							
Nature of contact	Sheared contacts					**Strike**		**Dip**
Material analyzed	Grab sample		**Sample Distribution**	23 samples				
Geochemical Characteristics: Please refer to figures 6, 8 and 10.								
Chemical affinity	Tholeiitic. Insufficient trace element data for determination of source region							
Sulphide saturation	Variable (both S-saturated and S-undersaturated)?							
Pd/Pt ratios	**Range**	0.73-4.33	**Median**	1.39	**Average**	2.04	**Number of Samples**	8
Pt + Pd (ppb)	**Range**	0.5-28.8	**Median**	3.1	**Average**	6.9	**Number of Samples**	12
Ni/Cu ratios	**Range**	0.23-1031.33	**Median**	34.72	**Average**	185.95	**Number of Samples**	18
Total Ni (ppm)	**Range**	24-3094	**Median**	1492	**Average**	1608	**Number of Samples**	23
Total Cu (ppm)	**Range**	3-681	**Median**	32	**Average**	113	**Number of Samples**	18
Total sulphur (wt %)	**Range**	0.01-0.17	**Median**	0.06	**Average**	0.06	**Number of Samples**	5
Anomalies	None							
Hypothetical Source Region	Insufficient trace element data for determination of source region							
Tectonic Setting	Mature convergent margin?							
Mineralization Type	Unknown							
Potential for exploration	2 (Generally low PGE values with sporadic high values, discontinuous chromitites)-alluvial Ir potential?							

MISCELLANEOUS NOTES:

The Chrome-Puddy Lake serpentinites are two elongate intrusions approximately 7 km x 1 km in size. They are composed of dunite, peridotite and minor pyroxenite, all of which are extensively serpentinized. Chromitites are exposed at the NE contact on Chrome Lake, and occurs in seams as disseminations in dunite and as pods.

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Intrusion Number	OTH-048		**Intrusion Name**	Killala Lake			
Township/Area	Killala Lake		**Resident Geologist District**	Thunder Bay South			
Location Description	56 km N of Marathon						
Property Name						**Access**	Road
Geological Setting	Alkaline intrusion associated with the Midcontinent Rift						
Intrusion Age/Era	1098 ±48 Ma (Rb-Sr)[1], 1185 ±90 Ma (K-Ar) alkalic gabbro[2], 1050 ± 35 Ma (Rb-Sr) syenite[1]						
Geophysical Surveys	Maps 2148G[4], 2158G[5]						
Recent mapping	OGS Maps 2191[2], 2220[6], 2666[7], 2668[8], Figure 3 in Sage (1988)[3]						
Morphology	Teardrop shaped						
Size of Intrusion	Up to 8 km in diameter, ~110 sq. km surface area[3]						
Lithologies Present	Olivine gabbro, troctolite, gabbro, plagioclase-bearing clinopyroxenite, syenodiorite, nepheline syenite, syenite[2,3]						
Distribution of Lithologies	Mafic << Intermediate						
Metamorphic grade	Greenschist						
Alteration	Weak chlorite and tremolite actinolite alteration						
Structure-Texture	Undeformed, weak mineralogical banding layering in gabbro rim of complex, trachytoidal texture common in nepheline syenite and occurs locally in syenodiorite lithologies toward the core of the complex. Mafic segregation banding is also common in more mafic-rich portions of the syenite (syenodiorite) near the center of the complex.[3]						
Magma Dynamics							
Characteristic Mineralogy							
Crystallization Sequence							
Host rock	Metavolcanic and metasedimentary rocks, granodiorite or granite						
Nature of contact	Intrusive						
Material analyzed	Grab sample		**Sample Distribution**	7 samples			
Geochemical Characteristics: Please refer to figures 20, 21 and 22.							
Chemical affinity	Alkalic						
Sulphide (S) saturation	S-saturated						
Pd/Pt ratios	**Range** 0.44-3.32	**Median**	0.88	**Average**	1.12	**Number of Samples**	7
Pt + Pd (ppb)	**Range** 2.2-74.2	**Median**	16.0	**Average**	23.9	**Number of Samples**	7
Ni/Cu ratios	**Range** 0.32-2.92	**Median**	0.92	**Average**	1.30	**Number of Samples**	7
Total Ni (ppm)	**Range** 49-544	**Median**	152	**Average**	164	**Number of Samples**	7
Total Cu (ppm)	**Range** 20-1063	**Median**	206	**Average**	298	**Number of Samples**	7
Total sulphur (wt %)	**Range** 0.02-2.70	**Median**	0.25	**Average**	0.59	**Number of Samples**	7
Anomalies	Mildly anomalous. Reasonable overall PGE values. Best numbers in troctolites.						
Hypothetical Source Region	Metasomatized source						
Tectonic Setting	Rift						
Mineralization Type	Type 1						
Potential for exploration	3 (good PGE values overall, similarities with the Coldwell Complex)						

MISCELLANEOUS NOTES:

The Killala Lake Alkalic Complex is one of several Midcontinent Rift related alkalic – carbonatite complexes that occur north of Lake Superior. Sage (1988) describes the Killala Lake Alkalic Complex as teardrop shaped with a silica-saturated core and an olivine gabbro rim that are separated by a nepheline-syenite unit. More specifically, these units are arcuate to almost completely circular in plan view and are distributed from the rim of the complex towards the core in a systematic pattern of gabbro, nepheline syenite, and syenite. This lithologic sequence reflects an increasing silica content and decreasing age towards the core of the complex.[3]

Widespread disseminated sulphide mineralization is associated with the gabbro rim. Highest copper and nickel values reported from random core samples near Sandspit Lake North include 2900 ppm copper and 440 ppm nickel.[3] Coates (1970)[2] and Sage (1988)[3] give brief descriptions of previous properties, occurrences and exploration activity in the Killala Lake Complex. The reader should refer to these for more information.

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Intrusion Number	OTH-049	**Intrusion Name**	Coldwell Complex					
Township/Area	Grain, McCoy, Coldwell	**Resident Geologist District**	Thunder Bay South					
Location Description	4 km NNW of Marathon							
Property Name	Marathon deposit: 37 million tonnes averaging 1.1 g/t Pd, 0.27 g/t Pt, 0.21 g/t Au, 1.85 g/t Ag, 0.38% Cu and 0.032% Ni (Eastern Gabbro?)[1] Geordie Lake Property: 5.2 g/t Pd, 1.71% Cu, 244 ppb Pt, 373 ppb Au, 28.8 g/t Ag.[1] Middleton copper occurrence: (no reported grades/values) (Western Gabbro?)[1] Bermuda Property: Skipper Lake mineralized zone and Four Dam Lake.[1] Skipper Lake: average grade of 1.05 g/t Pd+Pt+Au over 12 m (Eastern Gabbro?)[1]	**Access**	Road, helicopter					
Geological Setting	Alkaline intrusion associated with the Midcontinent Rift							
Intrusion Age/Era	1108 ±1 Ma[2]							
Geophysical Surveys								
Recent mapping	OGS Maps 2220[3], 2232[4], 2665[5], P.3232[6], P.3233[7], P.114[8]							
Morphology	Composed of three partly superimposed ring shaped structures[9] with a diameter ~30 km							
Size of Intrusion	Coldwell Complex covers a 580 sq. km area, ~60 sq. km surface area currently exposed, diameter ~30 km							
Lithologies Present	Gabbro, gabbronorite, olivine-gabbronorite, anorthosite, pyroxene syenite, nepheline syenite							
Distribution of Lithologies	Intermediate >> Mafic							
Metamorphic grade								
Alteration	Weak to intermediate sericite, epidote and tremolite/actinolite alteration							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence	Olivine, plagioclase, K-feldspar, nepheline							
Host rock	Metavolcanic and metasedimentary rocks, tonalite gneiss							
Nature of contact	Intrusive							
Material analyzed	Grab sample	**Sample Distribution**	13 samples					
Geochemical Characteristics: Please refer to figures 20, 21 and 22.								
Chemical affinity	Alkalic							
Sulphide (S) saturation	S-saturated and S-undersaturated							
Pd/Pt ratios	**Range**	0.10-3.43	**Median**	0.94	**Average**	1.44	**Number of Samples**	7
Pt + Pd (ppb)	**Range**	1.1-2697.4	**Median**	9.4	**Average**	358.7	**Number of Samples**	8
Ni/Cu ratios	**Range**	0.05-4.53	**Median**	0.12	**Average**	0.58	**Number of Samples**	13
Total Ni (ppm)	**Range**	2-679	**Median**	37	**Average**	130	**Number of Samples**	13
Total Cu (ppm)	**Range**	21-10574	**Median**	139	**Average**	1627	**Number of Samples**	13
Total sulphur (wt %)	**Range**	0.01-2.14	**Median**	0.28	**Average**	0.54	**Number of Samples**	11
Anomalies	Anomalous values (up to 2.7 g/t Pt+Pd in pegmatitic gabbro). Most PGE values are low overall.							
Hypothetical Source Region	Metasomatized mantle							
Tectonic Setting	Rift							
Mineralization Type	Type II/IV and Type III							
Potential for exploration	4 (large intrusion, excellent PGE grades)							

MISCELLANEOUS NOTES:

The Coldwell Alkalic Complex (580 sq. km) is located on the north shore of Lake Superior, 275 km east of Thunder Bay, and is the largest alkaline complex in North America. The Coldwell Alkalic Complex intrudes Archean rocks of the Abitibi and Wawa subprovinces. This complex is composed of several intrusive events of gabbro, quartz saturated to oversaturated and undersaturated syenite, and rare-metal-hosting pegmatites.[10]

Based on the distribution of lithologies the complex is interpreted as comprised of three superimposed ring subcomplexes or magmatic centers that become progressively younger in a southwest direction along the Trans-Superior Tectonic Zone[9,11]

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Intrusion Number	OTH-050		**Intrusion Name**	Musher Lake Pluton				
Township/Area	White Lake-South Area		**Resident Geologist District**	Thunder Bay South				
Location Description	13 km N of Hemlo							
Property Name							**Access**	Road
Geological Setting	Syn- to post-tectonic. Intermediate composition pluton situated at the interface between metavolcanic and metasedimentary rocks of the Schreiber-Hemlo greenstone belt.							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Map 2614[1]							
Morphology	Tadpole-shaped							
Size of Intrusion	10 km by 5 km							
Lithologies Present	Granodiorite							
Distribution of Lithologies	Intermediate							
Metamorphic grade	Amphibolite							
Alteration	Albitized							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock of mineralization	Metasedimentary rocks to the south, metabasaltic rocks and felsic metavolcanic rocks to the north							
Nature of contact								
Material analyzed	Grab sample		**Sample Distribution**	1 sample				
Geochemical Characteristics: Please refer to figures 14, 15 and 16.								
Chemical affinity	Calc-alkaline							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	-
Pt + Pd (ppb)	**Range**	1.2	**Median**	1.2	**Average**	1.2	**Number of Samples**	1
Ni/Cu ratios	**Range**	0.86	**Median**	0.86	**Average**	0.86	**Number of Samples**	1
Total Ni (ppm)	**Range**	19	**Median**	19	**Average**	19	**Number of Samples**	1
Total Cu (ppm)	**Range**	22	**Median**	22	**Average**	22	**Number of Samples**	1
Total sulphur (wt %)	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Anomalies	None							
Hypothetical Source Region	Enriched source?							
Tectonic Setting	Convergent margin							
Mineralization Type	Unknown							
Potential for exploration	1							

MISCELLANEOUS NOTES:

The intrusion consists of granodiorite to tonalite with abundant mafic mineral contents. Mafic minerals include biotite and hornblende, which are present in subequal abundances. Primary accessory minerals include sphene (up to 1% in some samples), epidote, opaque oxides, apatite and zircon. Plagioclase feldspar and biotite exhibit various degrees of alteration to white mica-epidote-carbonate and chlorite, respectively. Secondary sulphide is present in some samples.

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Intrusion Number	OTH-051	**Intrusion Name**	White Lake					
Township/Area	White Lake area, North Bryant	**Resident Geologist District**	Thunder Bay South					
Location Description	17 km ENE of Hemlo							
Property Name		**Access**	Road, boat					
Geological Setting	Syntectonic. The White Lake intrusion is composed of up to 4 bodies intruding metavolcanic rocks and metasedimentary rocks to the north and granite to the south and west.							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Map 2614[1]							
Morphology	4 bodies from rounded to elongate							
Size of Intrusion	4 bodies with up to 5 km strike length and 2 km width, surface area up to 40 sq. km							
Lithologies Present	Dunite-lherzolite, metamelagabbro, metamesogabbro, metaleucogabbro							
Distribution of Lithologies	Ultramafic << Mafic							
Metamorphic grade	Amphibolite							
Alteration	Chlorite, silica, epidote, albite, carbonate							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence	Olivine-plagioclase-clinopyroxene-hornblende							
Host rocks	Mafic metavolcanic rocks and metasedimentary rocks.							
Nature of contact								
Material analyzed	Grab sample	**Sample Distribution**	19 samples collected along the shores of White Lake and logging roads to the SW.					
Geochemical Characteristics: Please refer to figures 14, 15 and 16.								
Chemical affinity	Tholeiitic. Mildly enriched or crustal contamination.							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.74-1.38	**Median**	0.99	**Average**	1.02	**Number of Samples**	10
Pt + Pd (ppb)	**Range**	1.0-24.9	**Median**	3.7	**Average**	7.0	**Number of Samples**	14
Ni/Cu ratios	**Range**	0.42-286.25	**Median**	2.27	**Average**	20.68	**Number of Samples**	19
Total Ni (ppm)	**Range**	48-2290	**Median**	121	**Average**	317	**Number of Samples**	19
Total Cu (ppm)	**Range**	8-461	**Median**	52	**Average**	98	**Number of Samples**	19
Total sulphur (wt %)	**Range**	0.01-0.33	**Median**	0.03	**Average**	0.07	**Number of Samples**	17
Anomalies	Mildly anomalous							
Hypothetical Source Region	Unknown							
Tectonic Setting	Unknown							
Mineralization Type	Unknown							
Potential for exploration	2 (moderate size intrusion, moderately elevated PGE values)							

MISCELLANEOUS NOTES:

Recent logging in the western region has exposed more outcrops revealing far more complexity than apparent from earlier mapping. Much of this region is composed of metabasalts with some coarser grained gabbroic dykes. Ranges in the degree of deformation and potentially metamorphic grade across the intrusion suggest that this body does not represent a single intrusion.

REFERENCES:

[1] Muir, T.L. 2000. Geological compilation of the eastern half of the Schreiber-Hemlo greenstone belt; Ontario Geological Survey, Map 2614, scale 1:50 000.

OTHER REFERENCES:

Jackson, S.L., Beakhouse, G.P. and Davis, D.W. 1999. Regional geological setting of the Hemlo gold deposits: an interim progress report; Ontario Geological Survey, Open File Report, 5977, 151p.

Milne, V.G., Giblin, P.E., Bennett, G., Thurston, P.C., Wolfe, W.J., Giguere, J.F., Leany, E.J. and Rupert, R.J. 1972. Manitouwadge-Wawa Sheet, Geological Compilation Series, Algoma, Cochrane, Sudbury and Thunder Bay Districts; Ontario Geological Survey, Map 2220, scale 1:253 440.

Santaguida, F. 2001. Precambrian geology compilation series White River sheet; Ontario Geological Survey, Map 2666, scale 1:250 000.

Intrusion Number	OTH-052	**Intrusion Name**	White River					
Township/Area	Bryant	**Resident Geologist District**	Thunder Bay South					
Location Description								
Property Name		**Access**	Road					
Geological Setting	Syntectonic to post-tectonic intrusion in granitoid rocks of the Wawa Subprovince.							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	Map 2614[1]							
Morphology	Elongate	**Strike**	East	**Dip**				
Size of Intrusion	~200 m by ~1km. surface area is approximately 0.2 sq. km							
Lithologies Present	Hornblendite							
Distribution of lithologies	Ultramafic							
Metamorphic grade	Amphibolite							
Alteration	Chloritization and sericitization							
Structure-Texture	Massive							
Magma Dynamics	None							
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Granite							
Nature of contact								
Material analyzed	Grab sample	**Sample Distribution**	2 samples					
Geochemical Characteristics: Please refer to figures 14, 15 and 16.								
Chemical affinity	Tholeiitic. Limited Ti, Zr and Y data indicate crustal contamination or mildly enriched source.							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	1.48	**Median**	1.48	**Average**	1.48	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	6.2	**Median**	6.2	**Average**	6.2	**Number of Samples**	1
Ni/Cu ratios	**Range**	1.71-2.77	**Median**	2.24	**Average**	2.24	**Number of Samples**	2
Total Ni (ppm)	**Range**	97-116	**Median**	107	**Average**	107	**Number of Samples**	2
Total Cu (ppm)	**Range**	35-68	**Median**	52	**Average**	52	**Number of Samples**	2
Total sulphur (wt %)	**Range**	0.01	**Median**	0.01	**Average**	0.01	**Number of Samples**	1
Anomalies	None							
Hypothetical Source Region	Unknown							
Tectonic Setting	Unknown							
Mineralization Type	Unknown							
Potential for exploration	1 (low PGE values, small intrusion)							

MISCELLANEOUS NOTES:

Associated with more mafic hornblendite phases of White Lake intrusion.

REFERENCES:

[1] Muir, T.L. 2000. Geological compilation of the eastern half of the Schreiber-Hemlo greenstone belt; Ontario Geological Survey, Map 2614, scale 1:50 000.

Intrusion Number	OTH-053	**Intrusion Name**	Shabotik					
Township/Area	Shabotik, McGill	**Resident Geologist District**	Thunder Bay South					
Location Description	15 km NE of White Lake							
Property Name		**Access**	Road					
Geological Setting	Syn- to post-tectonic. The Shabotik occurrence is located 5 km SE of the Bulldozer Lake area. The occurrence is hosted in amphibolite facies rocks of the Wawa subprovince.							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Maps 2220[1], 2666[2]							
Morphology								
Size of Intrusion								
Lithologies Present	Monzodiorite, gabbro, hornblendite							
Distribution of Lithologies	Mafic							
Metamorphic grade	Amphibolite							
Alteration	Weak epidotization							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Gneissic tonalite							
Nature of contact								
Material analyzed	Grab sample	**Sample Distribution**	2 samples					
Geochemical Characteristics: Please refer to figures 14, 15 and 16.								
Chemical affinity	Tholeiitic (insufficient data)?							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	1.06-1.31	**Median**	1.19	**Average**	1.19	**Number of Samples**	2
Pt + Pd (ppb)	**Range**	3.0-3.3	**Median**	3.2	**Average**	3.2	**Number of Samples**	2
Ni/Cu ratios	**Range**	7.33-12.20	**Median**	9.77	**Average**	9.77	**Number of Samples**	2
Total Ni (ppm)	**Range**	66-183	**Median**	125	**Average**	125	**Number of Samples**	2
Total Cu (ppm)	**Range**	9-15	**Median**	12	**Average**	12	**Number of Samples**	2
Total sulphur (wt %)	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Anomalies	Low PGEs							
Hypothetical Source Region	Unknown							
Tectonic Setting	Unknown							
Mineralization Type	Type I and Type V							
Potential for exploration	1 (small, deformed, dissected)							

MISCELLANEOUS NOTES:

Sulphide mineralization is confined to a mafic-intermediate intrusion, composed of monzodiorite, gabbro and hornblendite. The size of the intrusion is not clear, but has been traced for > 90 m. Sulphides range from weakly disseminated to abundant disseminated (up to 25%), and are composed of pyrite, chalcopyrite, pyrrhotite and pentlandite. Anomalous PGE grades have also been reported associated with a varitextured quartz gabbro melanosome of a tonalitic gneiss-migmatite.

REFERENCES:

[1] Milne, V.G., Giblin, P.E., Bennett, G., Thurston, P.C., Wolfe, W.J., Giguere, J.F., Leany, E.J. and Rupert, R.J. 1972. Manitouwadge-Wawa Sheet, Geological Compilation Series, Algoma, Cochrane, Sudbury and Thunder Bay Districts; Ontario Geological Survey, Map 2220, scale 1:253 440.

[2] Johns, G.W. and McIlraith, S. 2003. Precambrian Geology Compilation Series, Hornepayne Sheet; Ontario Geological Survey, Map 2668, scale 1:250 000.

OTHER REFERENCES:

Bennett, G., Leahy, E.J., Donald, J.P., Frey, E., Kral, J.J. and Tortosa, D.J.J. 1987. Sault Ste. Marie Resident Geologist's area, northeastern region; *in* Kustra, C.R. (Eds.), Report of activities, 1986, Regional and resident geologists, Ontario Geological Survey, Miscellaneous Paper 134, p.233-255.

Santaguida, F. 2001. Precambrian geology compilation series, White River sheet; Ontario Geological Survey, Map 2666, scale 1:250 000.

Schnieders, B.R. and Smyk, M.C. 1989. Schreiber-Hemlo Resident Geologist's District; *in* Fenwick, K.G., Giblin, P.E. and Pitts, A.E. (Eds.), Report of activities, 1988, Regional and resident geologists, Ontario Geological Survey, Miscellaneous Paper 142, p.133-155.

Intrusion Number	OTH-054		**Intrusion Name**	Bulldozer				
Township/Area	Shabotik, McGill		**Resident Geologist District**	Thunder Bay South				
Location Description	45 km NE of Hemlo							
Property Name							**Access**	Road
Geological Setting	Syn- to post-tectonic, Archean intrusion located within gneissic tonalites in the Wawa Subprovince.							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Maps 2220[1], 2666[2]							
Morphology	Circular shaped							
Size of Intrusion	Diameter of approximately 8 km							
Lithologies Present	Pyroxenite, gabbro, hornblendite							
Distribution of Lithologies	Ultramafic < Mafic							
Metamorphic grade	Amphibolite							
Alteration	Intermediate sericitization and epidotization							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Gneissic tonalite							
Nature of contact								
Material analyzed	Grab sample		**Sample Distribution**	14 samples				
Geochemical Characteristics: Please refer to figures 14, 15 and 16.								
Chemical affinity	Tholeiitic. Based on limited Ti, Zr and Y data the source is mildly enriched or contaminated.							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	0.43-1.21	**Median**	0.85	**Average**	0.77	**Number of Samples**	11
Pt + Pd (ppb)	**Range**	0.6-17.0	**Median**	6.7	**Average**	7.1	**Number of Samples**	13
Ni/Cu ratios	**Range**	0.05-4.17	**Median**	0.40	**Average**	0.78	**Number of Samples**	14
Total Ni (ppm)	**Range**	18-107	**Median**	65	**Average**	62	**Number of Samples**	14
Total Cu (ppm)	**Range**	18-1931	**Median**	125	**Average**	339	**Number of Samples**	14
Total sulphur (wt %)	**Range**	0.01-4.64	**Median**	0.03	**Average**	0.50	**Number of Samples**	14
Anomalies	None. High-sulphide samples contain low PGE values.							
Hypothetical Source Region	Unknown							
Tectonic Setting	Unknown							
Mineralization Type	Type I and Type V							
Potential for exploration	2 (low PGE values, even in sulphide-bearing samples)							

MISCELLANEOUS NOTES:

The Bulldozer Lake Complex (BLC) is a prominent circular-shaped intrusion with a diameter of about 8 km. The BLC, based on preliminary work, is a large, composite mafic to ultramafic intrusion. PGE mineralization occurs within a disrupted zone as a 1.0 to 1.5 m wide zone of semi-massive (50%) pyrite, chalcopyrite and pyrrhotite, hosted within pyroxenite and subordinate gabbro.[3]

REFERENCES:

[1] Milne, V.G., Giblin, P.E., Bennett, G., Thurston, P.C., Wolfe, W.J., Giguere, J.F., Leany, E.J. and Rupert, R.J. 1972. Manitouwadge-Wawa Sheet, Geological Compilation Series, Algoma, Cochrane, Sudbury and Thunder Bay Districts; Ontario Geological Survey, Map 2220, scale 1:253 440.

[2] Santaguida, F. 2001. Precambrian geology compilation series, White River sheet; Ontario Geological Survey, Map 2666, scale 1:250 000.

[3] Freewest Resource 2001. FREEWEST BULLDOZER NICKEL-COPPER-COBALT-PGE PROSPECT - NW ONTARIO. www.freewest.com/english/propertis/bulldozer.htm

OTHER REFERENCES:

Cassidy Gold Corporation 2001. Jembi Lake Property, Bulldozer Lake, Ontario. www.cassidygold.com/properties2.php

Schnieders, B.R., Scott, J.F. and Smyk, M.C. 1998. Report of Activities 1997, Resident Geologist Program, Thunder Bay South Regional Resident Geologist's Report: Thunder Bay South District; Ontario Geological Survey, Open File Report 5971, 56p.

Intrusion Number	OTH-055	**Intrusion Name**	Moshkinabi
Township/Area	Herbert, Roberta, Foote, Spooner	**Resident Geologist District**	Thunder Bay South
Location Description	56 km NNE of Hemlo		
Property Name		**Access**	Road
Geological Setting	Syn- to post-tectonic. Ovoid intrusions located at the boundary between the Manitouwadge-Hornepayne greenstone belt and granitoid/tonalite		
Intrusion Age/Era	Archean		
Geophysical Surveys			
Recent mapping	OGS Map 2220[1], 2668[2]		
Morphology	Ovoid		
Size of Intrusion	3 km by 5 km		
Lithologies Present	Peridotite, gabbro, leucogabbro, anorthosite		
Distribution of Lithologies	Ultramafic < Mafic		
Metamorphic grade	Amphibolite		
Alteration			
Structure-Texture	Modally layered?		
Magma Dynamics			
Characteristic Mineralogy			
Crystallization Sequence			
Host rocks	Metavolcanic rocks and metasediments to the north and granite to south and west.		
Nature of contact			
Material analyzed	Grab sample	**Sample Distribution**	20 samples

Geochemical Characteristics: Please refer to figures 14, 15 and 16.

Chemical affinity	Tholeiitic. Zr/Y ratios suggest MORB-like source							
Sulphide (S) saturation	S-saturated and S-undersaturated.							
Pd/Pt ratios	**Range**	0.71-8.18	**Median**	2.67	**Average**	2.92	**Number of Samples**	19
Pt + Pd (ppb)	**Range**	4.0-2818.5	**Median**	67.3	**Average**	295.5	**Number of Samples**	19
Ni/Cu ratios	**Range**	0.27-113.75	**Median**	2.89	**Average**	16.29	**Number of Samples**	20
Total Ni (ppm)	**Range**	99-13294	**Median**	452	**Average**	1062	**Number of Samples**	20
Total Cu (ppm)	**Range**	4-3306	**Median**	95	**Average**	616	**Number of Samples**	20
Total sulphur (wt %)	**Range**	0.01-29.00	**Median**	0.04	**Average**	1.66	**Number of Samples**	20

Anomalies	Very anomalous (2.8 g/t Pt+Pd) in massive sulphides. Highly elevated PGE values.
Hypothetical Source Region	Depleted mantle?
Tectonic Setting	Unknown
Mineralization Type	Type III
Potential for exploration	3 (Excellent PGE grades but size MAY be limited – more work required)

MISCELLANEOUS NOTES:

Moshkinabi Lake Complex is a composite mafic to ultramafic intrusion that is at least 3 km across and 5 km long and corresponds to a well-defined, ovoid-shaped aeromagnetic anomaly. The intrusion consists of compositionally layered rock types, ranging from peridotite and gabbro, through leucogabbro and anorthosite. These rocks occur in repeated cyclic succession, with each cycle consisting of a peridotite base, overlain by a gabbro then anorthosite. PGE mineralization is hosted in net-textured to abundant disseminated pyrrhotite, chalcopyrite and pentlandite in coarse-grained, equigranular hornblendite and gabbro.

REFERENCES:

[1] Milne, V.G., Giblin, P.E., Bennett, G., Thurston, P.C., Wolfe, W.J., Giguere, J.F., Leany, E.J. and Rupert, R.J. 1972. Manitouwadge-Wawa Sheet, Geological Compilation Series, Algoma, Cochrane, Sudbury and Thunder Bay Districts; Ontario Geological Survey, Map 2220, scale 1:253 440.

[2] Johns, G.W. and McIlraith, S. 2003. Precambrian Geology Compilation Series, Hornepayne Sheet; Ontario Geological Survey, Map 2668, scale 1:250 000.

OTHER REFERENCES:

Freewest Resource 2001. FREEWEST ACQUIRES NEW PLATINUM GROUP ELEMENT-COPPER- NICKEL PROSPECT AT MOSHKINABI LAKE IN NORTHWESTERN ONTARIO. www.freewest.com/english/propertis/moshki.htm

Santaguida, F. 2001. Precambrian geology compilation series, White River sheet; Ontario Geological Survey, Map 2666, scale 1:250 000.

Intrusion Number	OTH-056		**Intrusion Name**	McVicar Lake				
Township/Area	McVicar Lake Area		**Resident Geologist District**	Thunder Bay North				
Location Description	4.1 km SSW of Lang Lake							
Property Name	McVicar Lake copper-nickel prospect[1]						**Access**	Float plane
Geological Setting	Syn- to post-tectonic intrusion							
Intrusion Age/Era	Archean							
Geophysical Surveys	Maps 82145 to 82149[2], Map 894G[3], Map 904G[4]							
Recent mapping	OGS Maps 2218[1], P.665[5], P.581[6], and P.808[7]							
Morphology	One or two irregularly shaped intrusions			**Strike**			**Dip**	
Size of Intrusion	Sage and Breaks (1982) note that a felsic intrusion divides the body into two parts: a western portion approximately 4 km long and 1.6 km wide, and an eastern portion approximately 9.7 km long and varying from 0.8 to 2.4 km in width[1].							
Lithologies Present	This study: Melagabbro, anorthositic gabbro, leucogabbro, anorthosite, quartz-gabbro, hornblende-gabbro.							
Distribution of Lithologies	Mafic							
Metamorphic grade	Greenschist to amphibolite							
Alteration	Weak to pervasive sericite, epidote, tremolite/actinolite and chlorite alteration							
Structure-Texture				**Strike**			**Dip**	
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Mafic to intermediate metavolcanic rocks of the Lang Lake greenstone belt; massive to foliated, felsic to intermediate intrusive rocks of the Dobie Lake Batholith on southeastern margin.							
Nature of contact	Intrudes metavolcanic rocks of the Lang Lake greenstone belt; is intruded by felsic to intermediate granitoids of the Dobie Lake Batholith							
Material analyzed	Grab sample		**Sample Distribution**	30 samples				
Geochemical Characteristics: Please refer to figures 2, 3 and 4.								
Chemical affinity	Tholeiitic? Enriched source or crustally-contaminated based on Ti, Zr and Y ratios.							
Sulphide saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.19-1.96	**Median**	0.41	**Average**	0.72	**Number of Samples**	5
Pt + Pd (ppb)	**Range**	0.6-13.0	**Median**	1.5	**Average**	3.9	**Number of Samples**	14
Ni/Cu ratios	**Range**	0.09-14.43	**Median**	0.86	**Average**	2.24	**Number of Samples**	26
Total Ni (ppm)	**Range**	9-404	**Median**	68	**Average**	93	**Number of Samples**	28
Total Cu (ppm)	**Range**	5-252	**Median**	60	**Average**	80	**Number of Samples**	30
Total sulphur (wt %)	**Range**	0.01-1.10	**Median**	0.06	**Average**	0.10	**Number of Samples**	28
Anomalies	None							
Hypothetical Source Region	Enriched mantle or crustal contamination							
Tectonic Setting	Mature convergent margin							
Mineralization Type	Unknown – no mineralization observed during this study, however previous reports and mapping do note chalcopyrite-pyrite-pyrrhotite mineralization – see miscellaneous notes.							
Potential for exploration	2 (moderate sized intrusion but poor overall PGE values)							

MISCELLANEOUS NOTES:

Sage and Breaks (1982) describe a zone of mineralization in the McVicar Lake area (McVicar Lake Prospect?) that occurs along a southeast to east trending brecciated, sheared contact situated between a large metagabbro pluton and mafic metavolcanics to the north. The mineralization was described to occur in two distinct modes: (1) as massive sulphide segregations which almost exclusively consist of fine-grained to coarse-grained pyrrhotite; and (2) as disseminated and fracture fillings of pyrrhotite and chalcopyrite in porphyritic and equigranular metagabbro[1]. Six grab samples representative of the variation in type and content of the sulphide mineralization were reported. Highest values include: 0.89% and 1.48% nickel, and palladium values up to 0.03 ounces/ton[1]. Fenwick (1971) also reports copper and nickel mineralization from this same area: best values include 0.96% copper across 3.2 feet and 0.26% nickel over 5 feet[5].

REFERENCES:

[1] Sage, R.P. and Breaks, F.W. 1982. Geology of the Cat Lake-Pickle Lake area, districts of Kenora and Thunder Bay; Ontario Geological Survey, Geological Report 207, 238p. Accompanied by Map 2218, scale 1:253 440.

[2] Ontario Geological Survey 2000. Airborne magnetic and electromagnetic surveys, Vickers area; Ontario Geological Survey, Maps 82145 to 82149, scale 1:20 000.

[3] ODM-GSC 1960. Aeromagnetic series, Cat Lake, Kenora district, Ontario; Ontario Department of Mines-Geological Survey of Canada, Map 894G, scale 1:63 360.

[4] ODM-GSC 1960. Aeromagnetic series, Gitche River, Kenora district, Ontario; Ontario Department of Mines-Geological Survey of Canada, Map 904G, scale 1:63 360.

[5] Fenwick, K.G. 1971. Lang-Cannon Lakes area (central part), District of Kenora (Patricia Portion); Ontario Geological Survey, Preliminary Map P.665, scale 1 inch to ½ mile.

[6] Fenwick, K.G. 1969. Lang-Cannon Lakes area, (west half), District of Kenora (Patricia Portion); Ontario Department of Mines, Preliminary Map P.581, scale 1:31 680.

Sage, R.P., Breaks, F.W., Troup, W.R. and Jordan, G.W. 1973. Geological series, Operation Pickle Lake, Bamaji Lake-Lake St. Joseph, districts of Kenora (Patricia Portion) and Thunder Bay; Ontario Division of Mines, Preliminary Map P.808, scale 1:126 720.

OTHER REFERENCES:

Goodwin, A.M. and Sabag, S. 1976. Metallogenic Patterns, Superior Geotraverse; *in* Geotraverse Conference 1976, University of Toronto, p.13-17.

Laird, F.C. 1931. Geology of the Shonia Lake Area, Patricia Portion of Kenora District, Ontario; Ontario Department of Mines, Annual Report 1930, v.39, pt.3, p.1-21.

Ontario Geological Survey 1988. McVicar Lake Area, District of Kenora (Patricia Portion); Ontario Geological Survey, Geological Data Inventory Folio 365, 33p.

Panagapko, D.A. and Gibson, J.C. 1980. Red Lake data series, McVicar Lake area, District of Kenora (Patricia Portion); Ontario Geological Survey, Preliminary Map P.2026, scale 1:15 840.

Intrusion Number	OTH-057		**Intrusion Name**	Kawashe Lake				
Township/Area	Kawashe Lake Area		**Resident Geologist District**	Thunder Bay North				
Location Description	60 km SW of Pickle Lake							
Property Name						**Access**	Float plane	
Geological Setting	Synvolcanic intrusion							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Map 2218[1] and P.3049[2]							
Morphology	4-5 km diameter		**Strike**		**Dip**			
Size of Intrusion	Subcircular to oblate in plan view							
Lithologies Present	Gabbro, some pyroxenite, hornblendite, and plagioclase-phyric mafic intrusive rock							
Distribution of Lithologies	Ultramafic < Mafic							
Metamorphic grade	Greenschist							
Alteration								
Structure-Texture			**Strike**		**Dip**			
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Mafic and intermediate metavolcanic rocks of the Meen-Dempster lakes belt (Meen-Jacknife lakes cycle)							
Nature of contact	Intrusive		**Strike**		**Dip**			
Material analyzed	Grab samples		**Sample Distribution**	12 samples				
Geochemical Characteristics: Please refer to figures 2, 3 and 4.								
Chemical affinity	Tholeiitic, MORB-like source (from majority of Ti, *Zr* and Y ratios)							
Sulphide saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	1.04-1.95	**Median**	1.25	**Average**	1.28	**Number of Samples**	8
Pt + Pd (ppb)	**Range**	0.8-59.2	**Median**	20.5	**Average**	18.6	**Number of Samples**	11
Ni/Cu ratios	**Range**	0.21-3.84	**Median**	1.12	**Average**	1.35	**Number of Samples**	12
Total Ni (ppm)	**Range**	11-313	**Median**	149	**Average**	136	**Number of Samples**	12
Total Cu (ppm)	**Range**	6-173	**Median**	127	**Average**	111	**Number of Samples**	12
Total sulphur (wt %)	**Range**	0.01-0.39	**Median**	0.05	**Average**	0.09	**Number of Samples**	11
Anomalies	Mildly anomalous. High to moderate PGE values.							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Rifted arc							
Mineralization Type	Unknown							
Potential for exploration	3 (moderate sized intrusion, high-moderate overall PGE values)							

MISCELLANEOUS NOTES:

The descriptive summary below is based on mapping and reports by Stott and Wilson (1986)[2], Stott (1985)[3] and Sage and Breaks (1982)[1]. The Kawashe gabbro is located approximately 63 km west southwest of Pickle Lake. The subcircular intrusion is 4 to 5 km in diameter and covers approximately 8-10 square kilometers surrounding Kawashe Lake and the area adjacent to Kaminiskag Lake. Contacts with the surrounding mafic to intermediate metavolcanics of the Dempster Lake and Jacknife Lake cycles are intrusive and disconformable. The gabbro is intruded near its center by tonalite and granodiorite of the 3 km long by 1 km wide Kawashe Lake Stock. Quartz porphyry dikes and trondhjemitic sills also intrude the gabbro and are interpreted as related to the Kawashe Lake Stock.

The dominant lithology is gabbro, with some pyroxenite, hornblendite, and plagioclase feldspar-phyric mafic intrusive rock. The gabbro is described as massive to moderately mineral aligned and typically consists of homogeneous fine- to medium-grained hornblende and plagioclase that is only subtly different from the surrounding mafic metavolcanic rocks. Equigranular to ophitic textures are noted where moderately to weakly foliated, with a strong schistosity developed only in narrow shear zones, particularly around the outer margins of the body.

Copper-nickel mineralization is noted in an outcrop in the southeastern area of the intrusion along a drainage system between Kaminiskag and Jacknife lakes. The outcrop consists of massive metamorphosed ultramafic rock; either pyroxenite-hornblendite or altered and metamorphosed peridotite. Best reported grades include 0.15% nickel and 0.15% copper.

REFERENCES:

[1] Sage, R.P. and Breaks, F.W. 1982. Geology of the Cat Lake-Pickle Lake area, districts of Kenora and Thunder Bay; Ontario Geological Survey, Geological Report 207, 238p. Accompanied by Map 2218, scale 1:253 440.

[2] Stott, G.M. and Wilson, A.C. 1986. Precambrian geology of the Muskegsagagen-Bancroft lakes area, District of Kenora (Patricia Portion); Ontario Geological Survey, Preliminary Map P.3049, scale 1:50 000.

[3] Stott, G.M. 1985. Regional stratigraphy and structure of the Lake St. Joseph area, central Uchi Subprovince; *in* Summary of Field Work and Other Activities 1985, Ontario Geological Survey, Miscellaneous Paper 126, p. 17-22.

OTHER REFERENCES:

Clifford, P.M. 1969. *Geology of the western Lake St. Joseph area*; Ontario Department of Mines, Geological Report 78, 61p.

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Ontario Geological Survey 1986. Kawashe Lake area, District of Kenora (Patricia Portion); Ontario Geological Survey, Geological Data Inventory Folio 324, 22p.

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Sage, R.P., Breaks, F.W., Troup, W.R. and Jordan, G.W. 1973. Operation Pickle Lake, Bamaji Lake-Lake St. Joseph, districts of Kenora (Patricia Portion) and Thunder Bay; Ontario Division of Mines, Preliminary Map P.808, scale 1:126 720.

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Stott, G.M. 1996. The geology and tectonic history of the Central Uchi Subprovince; Ontario Geological Survey, Open File Report 5952, 178p.

Stott, G.M. 1982. Meen Lake area, District of Kenora (Patricia Portion); *in* Summary of Field Work, 1982, Ontario Geological Survey, Miscellaneous Paper 106, p.10-14.

Stott, G.M. and Brown, G.H. 1986. Economic geology of the Pickle Lake metavolcanic belt, District of Kenora, Patricia Portion; *in* Summary of Field Work and Other Activities 1986, Ontario Geological Survey, Miscellaneous Paper 132, p.15-19.

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Intrusion Number	OTH-058			**Intrusion Name**	Dempster Lake Gabbro			
Township/Area	[illegible] Lake Area			**Resident Geologist District**	Thunder Bay [illegible]			
Location Description	50 km SW of Pickle Lake							
Property Name							**Access**	Float plane
Geological Setting	Synvolcanic?							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Map 2218[1] and P.3049[2]							
Morphology	Two elongate lenses			**Strike**			**Dip**	
Size of Intrusion	Two lenses, northern lens is ~20 km x 3 km and the southern lens is ~24 km x 4 km							
Lithologies Present	Mesogabbro, leucogabbro, anorthosite. Quartz-bearing light colored diorite locally observed along southern margin of the intrusion.[2]							
Distribution of Lithologies	Mafic							
Metamorphic grade	Amphibolite							
Alteration	Pervasively silicified, sericitised, chloritised and carbonatized, mildly hematitized.							
Structure-Texture				**Strike**			**Dip**	
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Mafic to felsic metavolcanic rocks of the Confederation assemblage and metasedimentary rocks of the Billett assemblage.							
Nature of contact	Intrusive					**Strike**		**Dip**
Material analyzed	Grab samples		**Sample Distribution**	12 samples				
Geochemical Characteristics: Please refer to figures 2, 3 and 4.								
Chemical affinity	Tholeiitic							
Sulphide saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.81-1.15	**Median**	0.96	**Average**	0.97	**Number of Samples**	4
Pt + Pd (ppb)	**Range**	0.6-27.4	**Median**	5.7	**Average**	8.2	**Number of Samples**	6
Ni/Cu ratios	**Range**	0.19-10.70	**Median**	1.13	**Average**	2.68	**Number of Samples**	11
Total Ni (ppm)	**Range**	11-641	**Median**	79	**Average**	160	**Number of Samples**	11
Total Cu (ppm)	**Range**	6-188	**Median**	70	**Average**	61	**Number of Samples**	12
Total sulphur (wt %)	**Range**	0.01-0.37	**Median**	0.06	**Average**	0.09	**Number of Samples**	9
Anomalies	One mildly anomalous sample. Remainder very low.							
Hypothetical Source Region	Unclear							
Tectonic Setting	Rifted arc							
Mineralization Type	Unknown							
Potential for exploration	2 (moderate size but low PGE values obtained)							

MISCELLANEOUS NOTES:

The following descriptive summary is based on mapping and reports by Stott and Wilson (1986)[2] and Sage and Breaks (1982)[1].
The Dempster Lake gabbro is located approximately 53 km southwest of Pickle Lake. It consists of two irregular to lens-shaped bodies, which discordantly intrude surrounding metasediments of the Billett Lake sedimentary belt, and metavolcanic rocks of the Dempster Lake and Bancroft Lake cycles. The northernmost lens is up to 20 km long and 3 km at its widest point. The southernmost part is up to 24 km long and 3.8 km at the widest point. The long axes of both sections of the intrusion are subparallel to regional stratigraphic layering. Dominant lithologies in both north and south sections include medium-grained dark green to black gabbro, with anorthosite to leucogabbro phases.

The southernmost gabbro body on Dempster Lake is bounded to the north by intermediate to felsic metavolcanic rocks of the Dempster Lake cycle, to the southeast by mafic metavolcanic rocks of the Bancroft Lake cycle and to the southwest by metasedimentary rocks of the Billett Lake sedimentary belt. It is intruded by the Knupp Lake Stock on its eastern margin. Although its margins tend to conform to the enveloping stratigraphy, it contains mafic volcanic and other supracrustal inclusions indicating its discordant nature. A narrow anorthositic phase is present on its northwest margin. High magnetic susceptibility characterizes the southern half of the body and it is noted as particularly magnetite-rich near an unassimilated ironstone inclusion.

The northernmost body, northeast of Dempster Lake is generally concordant with surrounding metavolcanic rocks of the Dempster Lake cycle on its southern and northwestern margins. It is intruded by the Kawinogans Lake pluton on its northeast margin. Numerous northeast-trending shear zones that are related to the regional deformation cross this body and are locally associated with pyritic gossan zones.

REFERENCES:

[1] Sage, R.P. and Breaks, F.W. 1982. Geology of the Cat Lake-Pickle Lake area, districts of Kenora and Thunder Bay; Ontario Geological Survey, Geological Report 207, 238p. Accompanied by Map 2218, scale 1:253 440.
[2] Stott, G.M. and Wilson, A.C. 1986. Precambrian geology of the Muskegsagagen-Bancroft lakes area, District of Kenora (Patricia Portion); Ontario Geological Survey, Preliminary Map P.3049, scale 1:50 000.

OTHER REFERENCES:

Ontario Geological Survey 1986. Airborne electromagnetic and total intensity magnetic survey, Pickle Lake area; Ontario Geological Survey, Maps 80894 to 80952, scale 1:20 000.

Sage, R.P., Breaks, F.W., Trocp, W.R. and Jordan, G.W. 1973. Operation Pickle Lake, Bamaji Lake-Lake St. Joseph, districts of Kenora (Patricia Portion) and Thunder Bay; Ontario Division of Mines, Preliminary Map P.808, scale 1:126 720.

Stott, G.M. and Corfu, F. 1991. Uchi Subprovince; in Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 1, p.145-236.

Stott, G.M. 1996. The geology and tectonic history of the Central Uchi Subprovince; Ontario Geological Survey, Open File Report 5952, 178p.

Intrusion Number	OTH-059		**Intrusion Name**	Thierry Mine				
Township/Area			**Resident Geologist District**	Thunder Bay North				
Location Description	8 km NW of Pickle Lake							
Property Name							**Access**	Road
Geological Setting								
Intrusion Age/Era								
Geophysical Surveys								
Recent mapping	OGS Map P.3056[1] and 2218[2]							
Morphology	Tabular intrusive gabbro, peridotite and dunite		**Strike**			**Dip**		
Size of Intrusion	Approximately 1-2 km long area of sheared ultramafic rocks and metagabbro. General orientation ENE.							
Lithologies Present								
Distribution of Lithologies	Ultramafic > Mafic							
Metamorphic grade	Middle amphibolite							
Alteration								
Structure-Texture			**Strike**			**Dip**		
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Mafic metavolcanic rocks (mainly tholeiitic flows) of the Pickle Lake greenstone belt							
Nature of contact	Unclear				**Strike**		**Dip**	
Material analyzed	Grab sample		**Sample Distribution**	1 sample from Thierry Mine				
Geochemical Characteristics: Please refer to figures 2, 3 and 4.								
Chemical affinity								
Sulphide saturation								
Pd/Pt ratios	**Range**	2.36	**Median**	2.36	**Average**	2.36	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	2.4	**Median**	2.4	**Average**	2.4	**Number of Samples**	1
Ni/Cu ratios	**Range**	2.26	**Median**	2.26	**Average**	2.26	**Number of Samples**	1
Total Ni (ppm)	**Range**	451	**Median**	451	**Average**	451	**Number of Samples**	1
Total Cu (ppm)	**Range**	200	**Median**	200	**Average**	200	**Number of Samples**	1
Total sulphur (wt %)	**Range**	0.14	**Median**	0.14	**Average**	0.14	**Number of Samples**	1
Anomalies								
Hypothetical Source Region								
Tectonic Setting								
Mineralization Type	Type I							
Potential for exploration	4 - Very high PGE grades – large reserve currently exists (see notes)							

MISCELLANEOUS NOTES:

The descriptive summary below is based on mapping and reports by Mason et al. (2001)[3], Stott (1996)[5], Sage and Breaks (1982)[2], and Patterson and Watkinson (1984a)[4].

The Thierry Mine or Umex Mine is located 8 km northwest of Pickle Lake. The Thierry deposit was mined from 1976 to 1982 with production totals of 967 043 lb copper, 267 621 lb nickel, 15 115 oz platinum, 40 021 oz palladium, and 14 689 oz gold from 5.759 million tons of ore. The Thierry deposit currently has reported reserves of 7 million tonnes grading 1.88% copper and 0.23% nickel.[3]

The Cu-Ni mineralization is associated with tabular intrusive rocks of gabbro, peridotite and dunite.[4] The rocks are strongly deformed to locally mylonitic and the mineralization is noted as largely confined to a major shear zone, consisting dominantly of very fine-grained biotite-chlorite-hornblende ultramafic schists. To a lesser extent, mineralization occurs within associated, relatively less intensely deformed, altered lenses of peridotite and gabbro, distributed along the footwall (Sage and Breaks, 1982). Patterson and Watkinson (1984a)[4] interpret the sulphide ore to be magmatic in origin with later remobilization and metamorphism forming several types of ore association (mylonite and breccia ore) (Patterson and Watkinson, 1984a).

Several of the listed references provide good descriptions and background information.

REFERENCES:

[1] Stott, G.M., Brown, G.H., Coleman, V.J., Green, G.M. and Reilly, B.A. 1989. Precambrian geology, Pickle Lake area, western part; Ontario Geological Survey, Preliminary Map P.3056, scale 1:50 000.
[2] Sage, R.P. and Breaks, F.W. 1982. Geology of the Cat Lake-Pickle Lake area, districts of Kenora and Thunder Bay; Ontario Geological Survey, Geological Report 207, 238p. Accompanied by Map 2218, scale 1:253 440.
[3] Mason, J.K., White, G.D., O'Brien, M.S., Komar, C., Stewart, J., Debicki, R. and Drost, A. 2001. Report of Activities, 2000, Resident Geologist Program, Thunder Bay North Regional Resident Geologist: Thunder Bay North District; Ontario Geological Survey, Open File Report 6048, 49p.
[4] Patterson, G.C. and Watkinson, D.H. 1984a. The geology of the Thierry Cu-Ni mine, northwestern Ontario; Canadian Mineralogist, v.22, p.3-11.
[5] Stott, G.M. 1996. The geology and tectonic history of the Central Uchi Subprovince; Ontario Geological Survey, Open File Report 5952, 178p.

OTHER REFERENCES:

Hurst, M.E. 1930. Pickle Lake-Crow River area, District of Kenora (Patricia portion); Ontario Department of Mines, Annual Report, v.39, pt.2, 35p.
Macdonald, A.J. and Cherry, M.E. 1988. The platinum group of elements in Ontario; Ontario Geological Survey, Open File Report 5681, 279p.
Patterson, G.C. 1980. The geology of the Kapkichi Lake ultra-mafic bodies and related Cu-Ni mineralization, Pickle Lake, Ontario; unpublished PhD thesis, Carleton University, Ottawa, Ontario, 331p.
Patterson, G.C. and Watkinson, D.H. 1984b. Metamorphism and supergene alteration of Cu-Ni sulfides, Thierry mine, northwestern Ontario; Canadian Mineralogist, v.22, p.13-21.
Stott, G.M. 1982. Regional geology and structure of the Pickle Lake metavolcanic belt, District of Kenora, Patricia Portion; *in* Summary of Field Work and Other Activities 1986, Ontario Geological Survey, Miscellaneous Paper 132, p.9-14.
Stott, G.M. and Brown, G.H. 1986. Economic Geology of the Pickle Lake metavolcanic belt, District of Kenora, Patricia Portion; *in* Summary of Field Work and Other Activities 1986, Ontario Geological Survey, Miscellaneous Paper 132, p.15-19.
Stott, G.M., Brown, G.H., Coleman, V.J., Green, G.M. and Reilly, B.A. 1989. Precambrian geology, Pickle Lake area, eastern part; Ontario Geological Survey, Preliminary Map P.3057, scale 1:50 000.
Verbeek, T., Dehenne, R. and Bowdidge, C. 1972. Geophysical case-history: the Thierry copper-nickel deposit in northwestern Ontario, Canada; Report of the Twenty-fourth session – International Geological Congress, 1972, v.24, issue 9, p.135-151.

Intrusion Number	OTH-060		**Intrusion Name**	July Falls				
Township/Area	Collishaw Lake Area		**Resident Geologist District**	Thunder Bay North				
Location Description	Southeast end of Badesdawa Lake							
Property Name							**Access**	Road, canoe
Geological Setting	Syn- to post-tectonic							
Intrusion Age/Era	Archean							
Geophysical Surveys	Ontario Geological Survey 1986. Airborne electromagnetic and total intensity magnetic survey, Pickle Lake area; Ontario Geological Survey, Maps 80894 to 80952, scale 1:20 000.							
Recent mapping	OGS Maps 2218[1] and P.3057[2]							
Morphology	oval-shaped, NNE-SW orientation							
Size of Intrusion	~1.5 km x ~11, Area: ~8 sq. km							
Lithologies Present	Quartz diorite, diorite, gabbro, pegmatitic gabbro and hornblendite							
Distribution of Lithologies	Mafic = Intermediate							
Metamorphic grade	Greenschist to amphibolite, quartz grains in dioritic parts noted to display effects of metamorphism – ie. wavy extinction, subgraining.							
Alteration	Intermediate to pervasive sericite and chlorite alteration							
Structure-Texture	The intrusion is generally medium-grained with coarse-grained phases[1,2]. Sage and Breaks (1982) note considerable shearing along the contact between the intrusion and hosting metavolcanics that may make distinction between the two units difficult. Additionally, the body generally displays weak to moderate cataclasis with local narrow shear zones (mylonite to ultramylonite) and the long axis of the intrusion generally parallels the foliation in hosting metavolcanic rocks[1,2,3].							
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Mafic metavolcanic rocks of the Pickle Lake greenstone belt border the intrusion on parts of its eastern, southern and southwestern margins. The remainder is engulfed in foliated granitic gneiss.							
Nature of contact	Intrusive				**Strike**		**Dip**	
Material analyzed	Grab samples		**Sample Distribution**	13 samples				
Geochemical Characteristics: Please refer to figures 2, 3 and 4.								
Chemical affinity	Calc-alkaline							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	0.52-1.08	**Median**	0.80	**Average**	0.80	**Number of Samples**	2
Pt + Pd (ppb)	**Range**	0.6-27.1	**Median**	1.9	**Average**	9.8	**Number of Samples**	3
Ni/Cu ratios	**Range**	0.22-5.62	**Median**	0.62	**Average**	1.19	**Number of Samples**	12
Total Ni (ppm)	**Range**	2-331	**Median**	39	**Average**	76	**Number of Samples**	12
Total Cu (ppm)	**Range**	3-330	**Median**	55	**Average**	79	**Number of Samples**	13
Total sulphur (wt %)	**Range**	0.01-0.13	**Median**	0.01	**Average**	0.03	**Number of Samples**	9
Anomalies	One mildly anomalous PGE value. All other samples are below PGE detection limits.							
Hypothetical Source Region	Metasomatized mantle							
Tectonic Setting	Convergent margin							
Mineralization Type	Unknown							
Potential for exploration	1 (very fractionated, low PGE values)							

MISCELLANEOUS NOTES:

There is one gold occurrence noted on Map 2218[1].

REFERENCES:

[1] Sage, R.P. and Breaks, F.W. 1982. Geology of the Cat Lake-Pickle Lake area, districts of Kenora and Thunder Bay; Ontario Geological Survey, Report 207, 238p. Accompanied by Map 2218, scale 1:253 440.

[2] Stott, G.M., Brown, G.H., Coleman, V.J., Green, G.M. and Reilly, B.A. 1989a. Precambrian geology, Pickle Lake area, eastern part; Ontario Geological Survey, Preliminary Map P.3057, scale 1:50 000.

[3] Stott, G.M. 1996. The geology and tectonic history of the Central Uchi Subprovince; Ontario Geological Survey, Open File Report 5952, 178p.

OTHER REFERENCES:

Evans, E.L. 1941. Geology of the Eastern Extension of Crow River Area; Ontario Department of Mines, Annual Report 1939, v.48, pt.7, p.1-9, accompanied by Map 48F, scale 1 inch to 2 miles.

Pye, E.G. 1976. Geology of the Crow River Area, District of Kenora (Patricia Portion); Ontario Department of Mines, Open File Report 5152, 264p.

Pye, E.G. 1975. Crow River Area, District of Kenora (Patricia Portion); Ontario Division of Mines, Preliminary Map P.1009, scale 1 inch to 1000 feet. Geology and compilation 1951.

Sage, R.P., Breaks, F.W., Troup, W.R. and Jordan, G.W. 1973. Operation Pickle Lake, Bamaji Lake-Lake St. Joseph, districts of Kenora (Patricia Portion) and Thunder Bay; Ontario Division of Mines, Preliminary Map P.808, scale 1:126 720.

Stott, G.M., Brown, G.H., Coleman, V.J., Green, G.M. and Reilly, B.A. 1989b. Precambrian geology of the Pickle Lake area, western part; Ontario Geological Survey, Preliminary Map P.3056, scale 1:50 000.

Intrusion Number	OTH-061		**Intrusion Name**	Lower Caribou Stock				
Township/Area			**Resident Geologist District**	Thunder Bay North				
Location	15 km NW of Armstrong							
Property Name					**Access**	Boat		
Geological Setting	Post-tectonic intrusion into granitoid rocks and gneisses							
Intrusion Age/Era	Neoarchean							
Geophysical Surveys								
Recent mapping	OGS Maps 2442[1], 2466[2], P.962[3]							
Morphology	Approximately circular		**Strike**		**Dip**			
Size of Intrusion	~ 3 km x 5 km in size							
Lithologies Present	Clinopyroxenite, melagabbro, metagabbro, quartz-monzonite, syenitic gabbro							
Stratigraphic Sequence								
Metamorphic grade								
Alteration	Weak to intermediate sericitization and uralitization							
Structure-Texture			**Strike**		**Dip**			
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Foliated granitoid rocks and gneisses to the north and massive granite to the south							
Nature of contact	Intrusive			**Strike**	**Dip**			
Material analyzed	Grab sample		**Sample Distribution**	12 samples				
Geochemical Characteristics: Please refer to figures 6, 8 and 10.								
Chemical affinity	Alkalic. Zr, Ti, and Y ratios indicate metasomatised source.							
Sulphide saturation	S-undersaturated to S-saturated							
Pd/Pt ratios	**Range**	0.53-2.47	**Median**	1.27	**Average**	1.46	**Number of Samples**	6
Pt + Pd (ppb)	**Range**	3.8-46.6	**Median**	15.6	**Average**	20.7	**Number of Samples**	7
Ni/Cu ratios	**Range**	0.37-17.50	**Median**	1.32	**Average**	3.79	**Number of Samples**	12
Total Ni (ppm)	**Range**	33-707	**Median**	138	**Average**	177	**Number of Samples**	12
Total Cu (ppm)	**Range**	8-1768	**Median**	35	**Average**	240	**Number of Samples**	12
Total sulphur (wt %)	**Range**	0.01-0.38	**Median**	0.01	**Average**	0.07	**Number of Samples**	12
Anomalies	Up to 47 ppb Pt+Pd in clinopyroxenite. Only clinopyroxenite units have above detection limit PGE values.							
Hypothetical Source Region	Metasomatised mantle							
Tectonic Setting	Unknown							
Mineralization Type	Unknown							
Potential for exploration	2 (ultramafic portions are minor)							

MISCELLANEOUS NOTES:

The Lower Caribou Stock is approximately 3 x 5 km and is approximately circular in shape. The intrusion includes alkaline felsic to ultramafic plutonic rocks ranging from biotite-clinopyroxene-hornblende albite syenites, diorites, melagabbro to hornblendite-clinoypyroxene-hornblendite. Xenoliths are abundant in parts of the intrusion.

REFERENCES:

[1] Breaks, F.W. 1981. Sioux Lookout-Armstrong, geological compilation series, Kenora and Thunder Bay districts; Ontario Geological Survey, Map 2442, scale 1:252 440.
[2] Sutcliffe, R.H. and Fernberg, P.A. 1983. Funger Lake, Thunder Bay District; Ontario Geological Survey, Map 2466, scale 1:31 680.
[3] Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M. and Bowen, R.P. 1974. Operation Ignace-Armstrong, Caribou Lake-Pashkokogan Lake sheet, Thunder Bay, Ontario; Ontario Division of Mines, Preliminary Map P.962, scale 1:126 720.

Intrusion Number	OTH-062	**Intrusion Name**	Caribou Stock				
Township/Area	North Armstrong - Caribou Lake area	**Resident Geologist District**	Thunder Bay North				
Location Description	18 km NNE of Armstrong						
Property Name						**Access**	Boat
Geological Setting	Syn-tectonic intrusion located at junction between gneisses and granitoids and volcanic rocks and metasediments of the Onaman-Tashota greenstone belt						
Intrusion Age/Era	Archean						
Geophysical Surveys							
Recent mapping	OGS Maps 2442[1], 2102[2], 2485[3], P.962[4]						
Morphology	Tadpole-shaped in plan view		**Strike**		**Dip**		
Size of Intrusion	3.5 km by 10 km, with a surface area of <40 sq. km						
Lithologies Present	Hornblende-gabbro, pyroxene-gabbro						
Stratigraphic Sequence							
Metamorphic grade	Greenschist to amphibolite						
Alteration	Intermediate chloritization and sericitization						
Structure-Texture	Layering at base		**Strike**		**Dip**		
Magma Dynamics	Dynamic base						
Characteristic Mineralogy	Varitextured zone at SE portion of intrusion						
Crystallization Sequence							
Host rocks	Foliated granitoid rocks and gneisses to south and volcanic rocks and metasediments along the east and northeast side.						
Nature of contact	Intrusive		**Strike**		**Dip**		
Material analyzed	Grab sample	**Sample Distribution**	14 samples collected on the western side of the intrusion				
Geochemical Characteristics: Please refer to figures 6, 8 and 10.							
Chemical affinity	High Mg-Fe tholeiite. Zr and Y ratios indicate MORB-like source						
Sulphide saturation	S-saturated						
Pd/Pt ratios	**Range** 1.72	**Median**	1.72	**Average**	1.72	**Number of Samples**	1
Pt + Pd (ppb)	**Range** 1.72	**Median**	1.72	**Average**	1.72	**Number of Samples**	1
Ni/Cu ratios	**Range** 0.08-2.17	**Median**	0.79	**Average**	0.83	**Number of Samples**	13
Total Ni (ppm)	**Range** 3-385	**Median**	58	**Average**	70.6	**Number of Samples**	14
Total Cu (ppm)	**Range** 12-444	**Median**	54	**Average**	96	**Number of Samples**	13
Total sulphur (wt %)	**Range** 0.02-0.32	**Median**	0.15	**Average**	0.15	**Number of Samples**	12
Anomalies	None						
Hypothetical Source Region	Depleted mantle						
Tectonic Setting	Mature convergent margin?						
Mineralization Type	Unknown						
Potential for exploration	1 (Poor PGE values overall – previously depleted)						

MISCELLANEOUS NOTES:

The Caribou Stock is approximately 4 km wide, up to 10 km long with a tadpole shape. It is composed of hornblende-gabbro and lesser pyroxene-gabbro. Evidence of interaction with the host lithologies is present in hybrid zones and zones with abundant xenoliths. The outer contact of the intrusion is irregular. Rare layering is present.

REFERENCES:

[1] Breaks, F.W. 1981. Sioux Lookout-Armstrong, geological compilation series, Kenora and Thunder Bay districts; Ontario Geological Survey, Map 2442, scale 1:252 440.

[2] Pye, E.G., Harris, F.R., Fenwick, K.G. and Baillie, J. 1966. Tashota-Geraldton sheet, geological compilation series, Thunder Bay and Cochrane districts; Ontario Geological Survey, Map 2102, scale 1:253 440.

[3] Sutcliffe, R.H. 1987. Fletcher Lake, Thunder Bay District; Ontario Geological Survey, Map 2485, scale 1:31 680.

[4] Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M. and Bowen, R.P. 1974. Operation Ignace-Armstrong, Caribou Lake-Pashkokogan Lake Sheet, Thunder Bay, Ontario; Ontario Division of Mines, Preliminary Map P.962, scale 1:126 720.

OTHER REFERENCES:

Sutcliffe, R.H. 1984. Geology of the Fletcher Lake area, District of Thunder Bay; Ontario Geological Survey, Open File Report 5497, 119p.

Intrusion Number	OTH-063		**Intrusion Name**	Junior Lake Area				
Township/Area	Junior Lake - Lamaune Lake area		**Resident Geologist District**	Thunder Bay North				
Location Description	80 km WNW of Armstrong							
Property Name	Landore Resources Inc.					**Access**	Road	
Geological Setting	Syn-volcanic to syn-tectonic mafic and ultramafic body intruding into mafic metavolcanic and metasedimentary rocks of the Onaman-Tashota greenstone belt							
Intrusion Age/Era	Archean							
Geophysical Surveys	OGS Data Sets 1031[1] and 1032[2]							
Recent mapping	OGS Maps 2102[3], 2667[4], P.962[5]							
Morphology	Elongated		**Strike**			**Dip**		
Size of Intrusion	Unclear							
Lithologies Present	Peridotite, pyroxenite, gabbro, and anorthosite							
Distribution of Lithologies	Ultramafic < Mafic							
Metamorphic grade	Greenschist							
Alteration	Intermediate to pervasive chloritization and sericitization							
Structure-Texture			**Strike**			**Dip**		
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Mafic metavolcanic and metasedimentary rocks of the Onaman-Tashota greenstone belt							
Nature of contact	Intrusive				**Strike**		**Dip**	
Material analyzed	Drill core* and grab samples		**Sample Distribution**	34 samples				
Geochemical Characteristics: Please refer to figures 6, 8 and 10.								
Chemical affinity	Tholeiitic. Ti, Zr and Y ratios indicate MORB-like source							
Sulphide saturation	S-saturated to S-undersaturated							
Pd/Pt ratios	**Range**	0.46-88.31	**Median**	2.52	**Average**	5.84	**Number of Samples**	30
Pt + Pd (ppb)	**Range**	1.3-676.4	**Median**	34.3	**Average**	91.6	**Number of Samples**	31
Ni/Cu ratios	**Range**	0.33-191.89	**Median**	2.00	**Average**	9.97	**Number of Samples**	34
Total Ni (ppm)	**Range**	8-7665	**Median**	193	**Average**	921	**Number of Samples**	34
Total Cu (ppm)	**Range**	3-3320	**Median**	121	**Average**	439	**Number of Samples**	34
Total sulphur (wt %)	**Range**	0.01-26.4	**Median**	0.22	**Average**	1.78	**Number of Samples**	31
Anomalies	Up to 676 ppb Pt+Pd in anorthositic gabbro. High PGE values in general.							
Hypothetical Source Region	Depleted mantle?							
Tectonic Setting	Convergent margin							
Mineralization Type	Type II and Type I							
Potential for exploration	4 (good background PGE)							

MISCELLANEOUS NOTES:

**Drill core and samples courtesy of Landore Resources Inc.*

REFERENCES:

[1] Ontario Geological Survey 1998. Airborne Magnetic and Electromagnetic Surveys, Processed Data and Derived Products: Archean and Proterozoic "Greenstone" Belts, Geraldton-Tashota area - Northwest; Ontario Geological Survey, ERLIS Data Set 1031.

[2] Ontario Geological Survey 1998. Airborne Magnetic and Electromagnetic Surveys, Processed Data and Derived Products: Archean and Proterozoic "Greenstone" Belts, Geraldton-Tashota area - Southeast; Ontario Geological Survey, ERLIS Data Set 1032.

[3] Pye, E.G., Harris, F.R., Fenwick, K.G. and Baillie, J. 1966. Tashota-Geraldton sheet, geological compilation series, Thunder Bay and Cochrane districts; Ontario Geological Survey, Map 2102, scale 1:253 440.

[4] Johns, G.W., McIlraith, S. and Stott, G.M. 2003. Bedrock geology compilation map, Longlac sheet; Ontario Geological Survey, Map 2667, scale 1:250 000.

[5] Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M. and Bowen, R.P. 1974. Operation Ignace-Armstrong, Caribou Lake-Pashkokogan Lake sheet, Thunder Bay, Ontario; Ontario Division of Mines, Preliminary Map P.962, scale 1:126 720.

OTHER REFERENCES:

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Ontario Geological Survey 1989. Airborne electromagnetic and total intensity magnetic survey, Tashota-Geraldton-Longlac area, District of Thunder Bay; Ontario Geological Survey, Maps 81259 to 81348, scale 1:20 000.

Straub, K.H., Stott, G.M. and Phillips, J. 2000. Precambrian Geology, Marshall Lake area, Onaman-Tashota greenstone belt; Ontario Geological Survey, Preliminary Map P.3424, scale 1:20 000.

Intrusion Number	OTH-064		**Intrusion Name**	Toronto Lake				
Township/Area	Toronto Lake area		**Resident Geologist District**	Thunder Bay North				
Location Description	North shore of Toronto Lake							
Property Name							**Access**	Road
Geological Setting	Synvolcanic to syn-tectonic intrusion into mafic and felsic metavolcanic rocks of the Onaman-Tashota greenstone belt							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Maps 2102[illegible], 2667[illegible], P.962[illegible]							
Morphology	Slightly arcuate and crudely lenticular body			**Strike**			**Dip**	
Size of Intrusion	9 km in length and reaching widths of nearly 1.6 km							
Lithologies Present	Gabbro							
Distribution of Lithologies	Mafic							
Metamorphic grade	Greenschist							
Alteration								
Structure-Texture				**Strike**			**Dip**	
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Mafic and felsic metavolcanic rocks.							
Nature of contact					**Strike**		**Dip**	
Material analyzed	Grab samples*		**Sample Distribution**	11 samples collected through				
Geochemical Characteristics: Please refer to figures 6, 8 and 10.								
Chemical affinity	Tholeiitic. Zr, Ti and Y ratios indicate a MORB-like source.							
Sulphide saturation	S-saturated to S-undersaturated?							
Pd/Pt ratios	**Range**	0.37-1.23	**Median**	0.72	**Average**	0.76	**Number of Samples**	4
Pt + Pd (ppb)	**Range**	0.8-26.7	**Median**	1.87	**Average**	6.82	**Number of Samples**	9
Ni/Cu ratios	**Range**	0.41-488.75	**Median**	1.17	**Average**	83.24	**Number of Samples**	10
Total Ni (ppm)	**Range**	39-2011	**Median**	110	**Average**	436	**Number of Samples**	11
Total Cu (ppm)	**Range**	4-179	**Median**	101	**Average**	86	**Number of Samples**	10
Total sulphur (wt %)	**Range**	0.01-0.22	**Median**	0.03	**Average**	0.08	**Number of Samples**	11
Anomalies	None							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Convergent margin							
Mineralization Type	Unknown							
Potential for exploration	2 (low PGE values but moderate sized intrusion, requires more work)							

MISCELLANEOUS NOTES:

More geochemical analyses are available in Berger 1992a.

The Crescent Lake map area is located approximately within 10 km northeast of Lake Nipigon in the Thunder Bay District. Numerous mafic and ultramafic intrusive bodies consisting of metagabbro, metapyroxenite, serpentinite, and anorthosite-anorthositic metagabbro are scattered sporadically throughout the area, particularly in the eastern half. The bodies intrude the Archean metavolcanic and metasedimentary rocks of the Onaman-Tashota greenstone belt. Several bodies are exposed as small isolated outcrops and others are ovate, lenticular or irregularly shaped masses. The most prominent intrusive bodies are located in the Ombabika River, Tape Lake, Boras Lake, Swole Lake, Juneau Lake, Whitehorse Lake, Ketchikan Lake and Toronto Lake areas. The Toronto Lake area contains the largest intrusive body in the area and consists of metagabbro, metapyroxenite, serpentinite, and anorthosite-anorthositic gabbro. The intrusive rocks underlie Toronto Lake as a slightly arcuate and crudely lenticular body extending over 9 km and reaching widths of nearly 1.6 km. In this area, the intrusive rocks have distorted and wedged apart the enclosing pre-existing Archean rocks.

Metagabbro is the most abundant mafic intrusive rock in the area and is present in all of the major bodies. It is typically mesocratic, medium- to coarse-grained and massive. The metagabbro is composed largely of green amphibole and plagioclase with lesser amounts of magnetite, quartz, sphene and local biotite. Plagioclase ranges in composition from calcic andesine (An[illegible]) in the Crescent Lake area to sodic andesine (An[illegible]) elsewhere in the map area. Relict ophitic textures are well preserved in the metagabbros that contain the more calcic plagioclase. In contrast, other metagabbros may contain roughly equant, poorly developed amphibole crystals within a fine-grained groundmass composed of anhedral feldspar and other minerals. In the Tape Lake area, a large body of metagabbro is exposed as a 'window' through the flat portion of a gently dipping diabase sheet. The metagabbro may also resemble the Keweenawan diabase. However, the metagabbro has a greenish cast unlike the diabase. Small dikes composed of fine-grained massive rocks similar to the metagabbro in composition are located in the eastern part of the map area in the Juneau Lake, Toronto Lake and Summit Lake areas. The dikes range in thickness from 45 cm to 60 cm and on average strike N75E.

Elsewhere, such as east of Chappais Lake, the pyroxenite occurs as small isolated outcrops. Numerous serpentinite outcrops are present along and near the south shore and west end of Toronto Lake. In outcrop, the serpentinite forms gently rounded and smooth surfaces. It is fine-grained, massive to weakly foliated and weathers to a pale grey colour. In thin section, it is composed largely of serpentine and magnetite. Serpentine pseudomorphs olivine and occurs locally in ovoid aggregates that are rimmed either partly or completely by fine granular magnetite. Magnetite is also present as discrete grains within the serpentine aggregates and as a very fine black dust distributed irregularly throughout the rock. Thin veinlets composed of cross-fibre asbestos are present in the serpentinite. The anorthosite is composed almost entirely of plagioclase and the anorthositic metagabbro contains in addition some amphibole or its alteration product. These two rocks are perhaps the most conspicuous and easily recognized rocks in the area. They are characteristically coarse-grained, and consist of creamy white weathered feldspar crystals (0.6 to 2.5 cm across) that commonly stand up in marked relief on outcrop surfaces. In thin section, the feldspar crystals are highly altered to a very fine-grained aggregate of sericite, carbonate, epidote-group minerals, and quartz. As well, original amphibole is largely altered to chlorite. The anorthositic rocks are associated with metagabbro north of Ketchikan Lake and with mafic and ultramafic rocks in the Ombabika River area. As well, anorthositic rocks outcrop in the central portion and at the west end of the Toronto Lake area.

**samples courtesy of B.R. Berger, Ontario Geological Survey (Sudbury)*

REFERENCES:

[1] Pye, E.G., Harris, F.R., Fenwick, K.G. and Baillie, J. 1966. Tashota-Geraldton sheet, geological compilation series, Thunder Bay and Cochrane districts; Ontario Geological Survey, Map 2102, scale 1:253 440.
[2] Johns, G.W., McIlraith, S. and Stott, G.M. 2003. Bedrock geology compilation map, Longlac sheet; Ontario Geological Survey, Map 2667, scale 1:250 000.
[3] Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M. and Bowen, R.P. 1974. Operation Ignace-Armstrong, Caribou Lake-Pashkokogan Lake sheet, Thunder Bay, Ontario; Ontario Division of Mines, Preliminary Map P.962, scale 1:126 720.

OTHER REFERENCES:

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Berger, B.R. 1992a. Geology of the Toronto Lake area, District of Thunder Bay; Ontario Geological survey, Open File Report 5784, 145p.
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Ontario Geological Survey 1989. Airborne electromagnetic and total intensity magnetic survey, Tashota-Geraldton-Longlac area, District of Thunder Bay; Ontario Geological Survey, Maps 81259 to 81348, scale 1:20 000.
Ontario Department of Mines-Geological Survey of Canada 1962. Airborne Magnetic Survey, Toronto Lake sheet, Thunder Bay District, Ontario; Ontario Department of Mines-Geological Survey of Canada, Map 2138G, scale 1 inch to 1 mile.
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Intrusion Number	OTH-065		**Intrusion Name**	Marshall Lake				
Township/Area	Summit Lake Area		**Resident Geologist District**	Thunder Bay North				
Location Description	95 km NW of Beardmore							
Property Name					**Access**			
Geological Setting	Syn-volcanic body intruding into the Onaman-Tashota greenstone belt							
Intrusion Age/Era								
Geophysical Surveys	OGS Data Sets 1031[1], 1032[2]							
Recent mapping	Maps 2102[3], 2667[4], P.962[5], P.3424[6]							
Morphology	Subcircular in plan view		**Strike**		**Dip**			
Size of Intrusion	3.75 to 4 km diameter and surface area of 11-12.5 sq. km							
Lithologies Present	Mainly gabbro and hornblendite with magnetite-bearing gabbro and hornblendite, melanocratic gabbro, and pegmatite dikes							
Distribution of Lithologies	Mafic							
Metamorphic grade	Greenschist							
Alteration								
Structure-Texture			**Strike**		**Dip**			
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Intermediate to felsic metavolcanic rocks of the Onaman-Tashota greenstone belt (Marshall Lake sequence?).							
Nature of contact	Intrusive		**Strike**		**Dip**			
Material analyzed	Grab samples*		**Sample Distribution**	3 samples				
Geochemical Characteristics: Please refer to figures 6, 8 and 10.								
Chemical affinity	Tholeiitic (limited data). Limited Zr, Y and Ti data infer a contaminated or enriched source							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Pt + Pd (ppb)	**Range**	1.0-16.0	**Median**	8.4	**Average**	8.4	**Number of Samples**	2
Ni/Cu ratios	**Range**	0.68-4.39	**Median**	1.34	**Average**	2.14	**Number of Samples**	3
Total Ni (ppm)	**Range**	63-272	**Median**	79	**Average**	138	**Number of Samples**	3
Total Cu (ppm)	**Range**	47-116	**Median**	62	**Average**	75	**Number of Samples**	3
Total sulphur (wt %)	**Range**	0.14-0.51	**Median**	0.28	**Average**	0.20	**Number of Samples**	3
Anomalies	None							
Hypothetical Source Region								
Tectonic Setting	Mature arc							
Mineralization Type	Unknown							
Potential for exploration	2 (low PGE values)							

MISCELLANEOUS NOTES:

Exposure of the Marshall Lake gabbro is generally poor with the exception of a 1-1.5 km stretch along the north shore of Marshall Lake where the southern margin of the body is exposed in several sparse outcrops. The dominant lithology present is gabbro with local pegmatitic, magnetite-bearing, and plagioclase-porphyritic variations. Hornblendite is also present locally but only forms a minor component of the gabbro body. Xenoliths of intermediate metavolcanic rock occur in at least three outcrops along the gabbro body's southern margin indicating an intrusive relationship between the Marshall Lake gabbro and the surrounding metavolcanic rocks of the Onaman-Tashota greenstone belt.
A minor mineral occurrence containing pyrite, pyrrhotite, magnetite and chalcopyrite is noted on a peninsula on the north shore of Marshall Lake (Map P.3424)[6]. Very weak disseminated pyrrhotite and weathered pyrrhotite (pits) were also noted by G.M. Stott.

**Hand samples and some geochemical analyses for this intrusion kindly provided by G.M. Stott, Ontario Geological Survey (Sudbury)*

REFERENCES:

[1] Ontario Geological Survey 1998. Airborne Magnetic and Electromagnetic Surveys, Processed Data and Derived Products: Archean and Proterozoic "Greenstone" Belts, Geraldton-Tashota area - Northwest; Ontario Geological Survey, ERLIS Data Set 1031.
[2] Ontario Geological Survey 1998. Airborne Magnetic and Electromagnetic Surveys, Processed Data and Derived Products: Archean and Proterozoic "Greenstone" Belts, Geraldton-Tashota area - Southeast; Ontario Geological Survey, ERLIS Data Set 1032.
[3] Pye, E.G., Harris, F.R., Fenwick, K.G. and Baillie, J. 1966. Tashota-Geraldton sheet, geological compilation series, Thunder Bay and Cochrane districts; Ontario Geological Survey, Map 2102, scale 1:253 440.
[4] Johns, G.W., McIlraith, S. and Stott, G.M. 2003. Bedrock geology compilation map, Longlac sheet; Ontario Geological Survey, Map 2667, scale 1:250 000.
[5] Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M. and Bowen, R.P. 1974. Operation Ignace-Armstrong, Caribou Lake-Pashkokogan Lake sheet, Thunder Bay, Ontario; Ontario Division of Mines, Preliminary Map P.962, scale 1:126 720.
[6] Straub, K.H., Stott, G.M. and Phillips, J. 2000. Precambrian Geology, Marshall Lake area, Onaman-Tashota greenstone belt; Ontario Geological Survey, Preliminary Map P.3424, scale 1:20 000.

OTHER REFERENCES:

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Amukun, S.E. 1985. Geology of the Little Marshall Lake area, District of Thunder Bay; Ontario Geological Survey, Open File Report 5561, 189p.
Amukun, S.E., Sawitsky, E. and Maharaj, M. 1979. Howard Falls area, northern half, District of Thunder Bay; Ontario Geological Survey, Preliminary Map P.2310, scale 1:15 840.
Langford, F.F. 1959. Geology of the Gripp Lake area; Ontario Department of Mines, Annual Report 1958, v.67, pt.3, 22p.
Macdonald, J. 1978. A general report of primary igneous volcanic textures and the rocks of the Marshall Lake area (an Archean greenstone belt), Thunder Bay mining district, Ontario, Canada; unpublished BSc thesis, Queen's University, Kingston, Ontario, 78p.
Ontario Geological Survey 1989. Airborne electromagnetic and total intensity magnetic survey, Tashota-Geraldton-Longlac area, District of Thunder Bay; Ontario Geological Survey, Maps 81259 to 81348, scale 1:20 000.

Intrusion Number	OTH-066		**Intrusion Name**	O'Sullivan Lake				
Township/Area	North of Rupert - O'Sullivan Lake area		**Resident Geologist District**	Thunder Bay North				
Location Description	110 km NE of Beardmore							
Property Name						**Access**	Road, boat	
Geological Setting	Synvolcanic mafic and ultramafic intrusive rocks intruded into mafic-intermediate volcanics of the Onaman-Tashota greenstone belt as a series of sills and a larger sill-like body							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Maps 2102[1], 2667[2], P.962[3], P.3377[4], P.3378[5]							
Morphology	Series of sills			**Strike**	NE-trending	**Dip**		
Size of Intrusion	Largest body: 9.5 km long, 1.5 to 2 km at widest point. North and northwest of O'Sullivan: 6.5 km long, 250 m at widest point; 2.4 km long, 250 m at widest point; 1 km long, 100 m at widest point; 600 m x 150 m; 2.75 km x 50 to 250 m. Also several smaller bodies in and surrounding the O'Sullivan Lake area							
Lithologies Present	Mainly gabbro with minor peridotite and possible pyroxenite							
Distribution of Lithologies	Ultramafic < Mafic							
Metamorphic grade								
Alteration								
Structure-Texture	Well differentiated in SE portion			**Strike**		**Dip**		
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Mafic and intermediate metavolcanic rocks							
Nature of contact					**Strike**		**Dip**	
Material analyzed	Grab sample*		**Sample Distribution**	4 samples				
Geochemical Characteristics: Please refer to figures 6, 8 and 10.								
Chemical affinity	Insufficient data							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	0.70	**Median**	0.70	**Average**	0.70	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	1.3-10.0	**Median**	1.4	**Average**	4.3	**Number of Samples**	3
Ni/Cu ratios	**Range**	0.26-1.39	**Median**	0.69	**Average**	0.78	**Number of Samples**	3
Total Ni (ppm)	**Range**	10-989	**Median**	111	**Average**	305	**Number of Samples**	4
Total Cu (ppm)	**Range**	8-124	**Median**	68	**Average**	67	**Number of Samples**	4
Total sulphur (wt %)	**Range**	0.01-0.10	**Median**	0.05	**Average**	0.05	**Number of Samples**	4
Anomalies	None							
Hypothetical Source Region	Depleted mantle?							
Tectonic Setting	Convergent margin							
Mineralization Type	Unknown							
Potential for exploration	2 (low PGE values)							

MISCELLANEOUS NOTES:

**Samples and some geochemical analyses for this intrusion kindly provided by G.M. Stott, Ontario Geological Survey (Sudbury)*

Mapping by Parker and Stott (1998)[4,5] indicates that the sills or sill-like bodies in the O'Sullivan Lake area consist dominantly of undifferentiated monotonous gabbro with little mineralogical or textural variation. The exception to this remains in the largest of the bodies that contains peridotitic[4,5,6] and possibly pyroxenitic[6] portions along its southern margin. Best exposures of these ultramafic portions are located on the north side of the Kawashkagama River just west of Kowkash Bay.

Note: Parker and Stott (1998) did not observe pyroxenite within the sills or sill-like bodies of the O'Sullivan Lake area. The detailed description that follows is from Moorhouse (1956)[6] and is limited to only the largest of the mafic-(ultramafic) bodies.

The largest differentiated gabbro sill in the O'Sullivan Lake area contains peridotitic and pyroxenite facies and is highly altered. The peridotite facies is the most persistent and easily recognized phase of the sill. The peridotite phase forms a continuous belt, 90 m to nearly 300 m wide, along the south side of the intrusion. In thin section, the peridotite is invariably altered and consists largely of serpentine that has replaced primary olivine. A small amount of carbonate, talc and lesser amounts of magnetite are associated with the serpentine. A pyroxenite from within the serpentine zone contains serpentine and remnants of a colourless hypersthene. Analysis of this serpentine yielded only trace amounts of chromium. In a few outcrops, the serpentine is seamed with small, irregular asbestos-bearing cracks. North of the serpentine zone, the gabbro sill consists largely of medium- to coarse-grained altered gabbro with some isolated occurrences of altered pyroxenite. The pyroxene in the gabbro is completely replaced by an almost colourless, fibrous amphibole. However, the plagioclase (labradorite) has undergone very little alteration. Sphene is commonly present. In thin section, the pyroxenite is composed of the same mineral assemblage as the gabbro, except that the colorless amphibole (after pyroxene) is more abundant. The north contact of the sill is not well defined. In this area, the sill is in contact with a series of coarse-grained amphibolite rocks and appears to be metamorphosed to coarse hornblendic rocks along this contact. Gabbro is also present in the eastern portion of the map area just south of Superb Lake where it occurs as two or three distinct bands 30 to 210 m wide. This gabbro is intensely sheared and most outcrops are characterized by a marked fluxion structure. In thin section, this rock contains plagioclase (labradorite), sphene and amphibole that have all undergone deformation. This gabbro is believed to be sill-like in form since it appears to parallel the strike of the volcanic rocks with which it is associated.

REFERENCES:

[1] Pye, E.G., Harris, F.R., Fenwick, K.G. and Baillie, J. 1966. Tashota-Geraldton sheet, geological compilation series, Thunder Bay and Cochrane districts; Ontario Geological Survey, Map 2102, scale 1:253 440.
[2] Johns, G.W., McIlraith, S. and Stott, G.M. 2003. Bedrock geology compilation map, Longlac sheet; Ontario Geological Survey, Map 2667, scale 1:250 000.
[3] Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M. and Bowen, R.P. 1974. Operation Ignace-Armstrong, Caribou Lake-Pashkokogan Lake sheet, Thunder Bay, Ontario; Ontario Division of Mines, Preliminary Map P.962, scale 1:126 720.
[4] Parker, J.R. and Stott, G.M. 1998. Precambrian geology, O'Sullivan Lake area (west half), northeastern Onaman-Tashota greenstone belt, eastern Wabigoon Subprovince; Ontario Geological Survey, Preliminary Map P.3377, scale 1:20 000.
[5] Parker, J.R. and Stott, G.M. 1998. Precambrian Geology, O'Sullivan Lake area (east half), northeastern Onaman-Tashota greenstone belt, eastern Wabigoon Subprovince; Ontario Geological Survey, Preliminary Map P.3378, scale 1:20 000.
[6] Moorhouse, W.W. 1956. Geology of the O'Sullivan Lake Area, Thunder Bay District, Ontario; Ontario Department of Mines, Annual Report 1955, v.64, pt.4. Accompanied by Map 1955-2, scale 1:12 000.

OTHER REFERENCES:

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Intrusion Number	OTH-067			**Intrusion Name**	Gzowski			
Township/Area	Gzowski			**Resident Geologist District**	Thunder Bay North			
Location Description	79 km NW of Beardmore							
Property Name						**Access**		
Geological Setting	Synvolcanic to syn-tectonic mafic intrusive into mafic metavolcanics and metasediments of the Onaman-Tashota greenstone belt							
Intrusion Age/Era	2698-2694 Ma							
Geophysical Surveys	OGS Data Sets 1031^1 and 1032^2							
Recent mapping	OGS Maps 2102^3, 2667^4, $P.962^5$, $P.3390^6$							
Morphology	Southernmost body is sill-like, northernmost body is a border or marginal phase of the Deeds Pluton.							
Size of Intrusion	Southernmost gabbro body: 12 km x up to 1.4 km, northernmost body (margin of Deeds Pluton): up to 8.5 km x <0.7 km							
Lithologies Present	Hornblende monzonite, gabbro, melagabbro							
Distribution of Lithologies	Mafic							
Metamorphic grade	Greenschist							
Alteration								
Structure-Texture	Primary igneous foliation – trend roughly parallel to length of sills. Mineral lineation – moderate plunges to the northwest.							
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Mafic metavolcanic and metasedimentary rocks							
Nature of contact					**Strike**		**Dip**	
Material analyzed	Grab samples*			**Sample Distribution**	10 samples collected from NE corner			
Geochemical Characteristics: Please refer to figures 6, 8 and 10.								
Chemical affinity	Composite intrusion – some portions are tholeiitic and some portions are calc-alkaline							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	0.69-1.94	**Median**	1.25	**Average**	1.35	**Number of Samples**	5
Pt + Pd (ppb)	**Range**	1.6-25.4	**Median**	6.7	**Average**	12.0	**Number of Samples**	5
Ni/Cu ratios	**Range**	0.57-5.93	**Median**	1.40	**Average**	2.48	**Number of Samples**	7
Total Ni (ppm)	**Range**	39-439	**Median**	82	**Average**	159	**Number of Samples**	7
Total Cu (ppm)	**Range**	23-108	**Median**	61	**Average**	62	**Number of Samples**	7
Total sulphur (wt %)	**Range**	0.02-0.98	**Median**	0.05	**Average**	0.19	**Number of Samples**	7
Anomalies	None. Some anomalous PGE numbers in hornblendite							
Hypothetical Source Region	Unclear – both depleted mantle-like and enriched (crust?) Ti, Zr and Y ratios are present							
Tectonic Setting	Mature convergent margin?							
Mineralization Type	Unknown							
Potential for exploration	1 (S-saturated)							

MISCELLANEOUS NOTES:

Mafic intrusive rocks of the Gzowski Lake area are predominantly gabbroic and occur as both sill-like intrusions in the hosting mafic metavolcanic and metasedimentary rocks and as a possible marginal phase of the Deeds Pluton.

The southernmost gabbro body is located immediately north of the Gzowski Pluton and consists of a west-northwest trending sill up to 12 km long and 1.4 km at its widest point. The sill follows the north side of the Gzowski Fault between the Gzowski and Deeds plutons and intrudes mafic metavolcanic and metasedimentary rocks of the Toronto-Willet Lakes section. The intrusion grades locally to melanocratic gabbro.

The margin of the Deeds Pluton is intermittently bordered by hornblende monzonitic to gabbroic phases. The largest gabbroic phase is up to 700 m at its widest point and extends for up to 8.5 km along the southern margin of the Deeds Pluton.

**Samples and some geochemical analyses for this intrusion kindly provided by G.M. Stott, Ontario Geological Survey (Sudbury)*

REFERENCES:

[1] Ontario Geological Survey 1998. Airborne Magnetic and Electromagnetic Surveys, Processed Data and Derived Products: Archean and Proterozoic "Greenstone" Belts, Geraldton-Tashota area - Northwest; Ontario Geological Survey, ERLIS Data Set 1031.
[2] Ontario Geological Survey 1998. Airborne Magnetic and Electromagnetic Surveys, Processed Data and Derived Products: Archean and Proterozoic "Greenstone" Belts, Geraldton-Tashota area - Southeast; Ontario Geological Survey, ERLIS Data Set 1032.
[3] Pye, E.G., Harris, F.R., Fenwick, K.G. and Baillie, J. 1966. Tashota-Geraldton sheet, geological compilation series, Thunder Bay and Cochrane districts; Ontario Geological Survey, Map 2102, scale 1:253 440.
[4] Johns, G.W., McIlraith, S. and Stott, G.M. 2003. Bedrock geology compilation map, Longlac sheet; Ontario Geological Survey, Map 2667, scale 1:250 000.
[5] Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M. and Bowen, R.P. 1974. Operation Ignace-Armstrong, Caribou Lake-Pashkokogan Lake sheet, Thunder Bay, Ontario; Ontario Division of Mines, Preliminary Map P.962, scale 1:126 720.

Stott, G.M., Straub, K.H. and Fortin, D. 1999. Precambrian geology, Willet-Gledhill lakes area, Onaman-Tashota greenstone belt; Ontario Geological Survey, Preliminary Map P.3390, scale 1:30 000.

OTHER REFERENCES:

Ontario Geological Survey 1989. Tashota-Geraldton-Longlac area, airborne electromagnetic survey, total intensity magnetic survey, District of Thunder Bay; Ontario Geological Survey, Map 81284, scale 1:20 000.

Stott, G.M. and Straub, K.H. 1999. Geology of the Gledhill-Willet Lakes area, Onaman-Tashota greenstone belt, east Wabigoon Subprovince; *in* Summary of Field Work and Other Activities 1998, Ontario Geological Survey, Miscellaneous Paper 169, p.119-126.

Intrusion Number	OTH-068			**Intrusion Name**	Jackson Gabbro-Ledingham			
Township/Area	Martin Lake Area			**Resident Geologist District**	Thunder Bay North			
Location Description	9.5 km east of NE corner of Lake Nipigon.							
Property Name							**Access**	
Geological Setting	Syn-volcanic to syn-tectonic intrusion in the Onaman-Tashota greenstone belt							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Maps 2102[1], 2667[2], P.962[3], 2429[4], P.3352[5]							
Morphology	Sheeted intrusion				**Strike**		**Dip**	
Size of Intrusion	Southernmost body approximately 14 km long, 3 km at widest. Northernmost body approximately 23 km long, 1 km at widest.							
Lithologies Present	Gabbro to diorite, pyroxenite, melagabbro, gabbronorite							
Distribution of Lithologies	Ultramafic << Mafic							
Metamorphic grade	Greenschist							
Alteration	Extensively saussuritized feldspars, altered mafic minerals.							
Structure-Texture	Mineral foliation – generally parallel to the trend of the sills (and associated mineral lineation)							
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Mafic and felsic metavolcanic rocks							
Nature of contact					**Strike**		**Dip**	
Material analyzed	Grab sample*			**Sample Distribution**	8 samples			
Geochemical Characteristics: Please refer to figures 6, 8 and 10.								
Chemical affinity	High Fe-tholeiite. Zr, Ti and Y ratios indicate MORB-like magma.							
Sulphide saturation	S-saturated to S-undersaturated (limited data)							
Pd/Pt ratios	**Range**	1.29-4.36	**Median**	2.82	**Average**	2.82	**Number of Samples**	2
Pt + Pd (ppb)	**Range**	1.6-179.4	**Median**	8.7	**Average**	49.6	**Number of Samples**	4
Ni/Cu ratios	**Range**	0.31-2.55	**Median**	1.01	**Average**	1.09	**Number of Samples**	8
Total Ni (ppm)	**Range**	18-304	**Median**	78	**Average**	95	**Number of Samples**	8
Total Cu (ppm)	**Range**	29-191	**Median**	88	**Average**	94	**Number of Samples**	8
Total sulphur (wt %)	**Range**	0.01-0.12	**Median**	0.05	**Average**	0.06	**Number of Samples**	8
Anomalies	179 ppb Pt+Pd in metapyroxenite							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Mature convergent margin							
Mineralization Type	Unknown							
Potential for exploration	2 (Good PGE values, may be S-saturated)							

MISCELLANEOUS NOTES:

The Ledingham or Onaman River intrusion is located approximately 38 km north-northeast of the town of Beardmore and 1 km west of Conglomerate Lake. The main part of the body consists of an elliptical gabbroic intrusion approximately 3 km north-south by 5 km east-west.[4] Dominant lithologies include gabbro to quartz gabbro and diorite. Local outcrops containing mafic metavolcanic xenoliths indicate an intrusive relationship with the surrounding mafic to felsic metavolcanics of the Onaman-Tashota greenstone belt. Moderate to strong alteration of mafic minerals and extensive saussuritization of feldspars is common.

Mapping by Stott et al. (1996) indicates that two east-west to northeast trending sill-like bodies extend from the main part of the body on its western side. The northernmost extension is approximately 23 km long and 1 km at its widest point, while the southernmost extension is approximately 14 km long and 3 km at its widest point. Mineral foliations and lineations parallel to regional trends are common within the intrusion.

**Samples and some geochemical analyses for this intrusion kindly provided by G.M. Stott, Ontario Geological Survey (Sudbury)*

REFERENCES:

[1] Pye, E.G., Harris, F.R., Fenwick, K.G. and Baillie, J. 1966. Tashota-Geraldton sheet, geological compilation series, Thunder Bay and Cochrane districts; Ontario Geological Survey, Map 2102, scale 1:253 440.
[2] Johns, G.W., McIlraith, S. and Stott, G.M. 2003. Bedrock geology compilation map, Longlac sheet; Ontario Geological Survey, Map 2667, scale 1:250 000.
[3] Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M. and Bowen, R.P. 1974. Operation Ignace-Armstrong, Caribou Lake-Pashkokogan Lake sheet, Thunder Bay, Ontario; Ontario Division of Mines, Preliminary Map P.962, scale 1:126 720.
[4] Amukun, S.E. 1980. Geology of the Conglomerate Lake area, district of Thunder Bay; Ontario Geological Survey, Report 197, 101p. Accompanied by Map 2429, scale 1:31 680.
[5] Stott, G.M., Morrison, D., Gale, V. and Wachowiak, N. 1996. Precambrian Geology of south-central Onaman-Tashota greenstone belt; Ontario Geological Survey, Preliminary Map P.3352, scale 1:50 000.

OTHER REFERENCES:

Ontario Geological Survey 1989. Tashota-Geraldton-Longlac area, airborne electromagnetic survey, total intensity magnetic survey, District of Thunder Bay; Ontario Geological Survey, Maps 81259 to 81348, scale 1:20 000.

Intrusion Number	OTH-069	**Intrusion Name**	Crooked Green		
Township/Area	North of Pipher	**Resident Geologist District**	Thunder Bay North		
Location Description	33 km NNE of Beardmore				
Property Name		**Access**			
Geological Setting	Synvolcanic to syn-tectonic intrusion in mafic metavolcanic rocks of the Onaman-Tashota greenstone belt				
Intrusion Age/Era	Neoarchean				
Geophysical Surveys					
Recent mapping	OGS Maps 2102[1], 2667[2], 2429[3], P.3352[4], P.962[5]				
Morphology	Circular in plan view	**Strike**		**Dip**	
Size of Intrusion	7 km diameter with ~38 sq. km surface area				
Lithologies Present	Composite mafic intrusion consisting of hornblende gabbro and quartz diorite				
Distribution of Lithologies	Mafic - Intermediate				
Metamorphic grade	Greenschist				
Alteration					
Structure-Texture	Mineral foliation – mainly east-west trending	**Strike**		**Dip**	
Magma Dynamics					
Characteristic Mineralogy					
Crystallization Sequence					
Host rocks	Mafic metavolcanic rocks of the Onaman-Tashota greenstone belt				
Nature of contact		**Strike**		**Dip**	
Material analyzed	Grab samples*	**Sample Distribution**	2 samples		

Geochemical Characteristics: Please refer to figures 6, 8 and 10.

Chemical affinity	Insufficient data for chemical affinity. Enriched source or crustal-contamination							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Pt + Pd (ppb)	**Range**	0.6	**Median**	0.6	**Average**	0.6	**Number of Samples**	1
Ni/Cu ratios	**Range**	1.57	**Median**	1.57	**Average**	1.57	**Number of Samples**	1
Total Ni (ppm)	**Range**	69-99	**Median**	84	**Average**	84	**Number of Samples**	2
Total Cu (ppm)	**Range**	44	**Median**	44	**Average**	44	**Number of Samples**	1
Total sulphur (wt %)	**Range**	0.01	**Median**	0.01	**Average**	0.01	**Number of Samples**	1

Anomalies	None
Hypothetical Source Region	Unknown
Tectonic Setting	Unknown
Mineralization Type	Unknown
Potential for exploration	1 (low PGE values, inappropriate lithologies)

MISCELLANEOUS NOTES:

The Crooked Green Lake Intrusion is a composite mafic intrusion located approximately 32 km north-northeast of the town of Beardmore, 27.5 km north of Highway 11 on the Auden Road (Highway 801). The intrusion is circular in plan view and approximately 7 km in diameter. Dominant lithologies within the intrusion include hornblende gabbro, diorite, and quartz diorite with the intrusion being predominantly gabbroic in the southernmost 2/3 of the intrusion and dioritic in the northern 1/3. Minor outcrops of vari-textured or pegmatitic gabbro, hornblendite and gabbro breccia also occur. Alteration of mafic minerals and plagioclase in the intrusion was noted by Amukun (1980a). Stott et al. (1996) also noted a predominantly east-west trending mineral foliation.

**Samples kindly provided by G.M. Stott, Ontario Geological Survey (Sudbury)*

REFERENCES:

[1] Pye, E.G., Harris, F.R., Fenwick, K.G. and Baillie, J. 1966. Tashota-Geraldton sheet, geological compilation series, Thunder Bay and Cochrane districts; Ontario Geological Survey, Map 2102, scale 1:253 440.

[2] Johns, G.W., McIlraith, S. and Stott, G.M. 2003. Bedrock geology compilation map, Longlac sheet; Ontario Geological Survey, Map 2667, scale 1:250 000.

[3] Amukun, S.E. 1980a. Precambrian geology of the Conglomerate Lake area, district of Thunder Bay; Ontario Geological Survey, Map 2429, scale 1:31 680.

[4] Stott, G.M., Morrison, D., Gale, V. and Wachowiak, N. 1996. Precambrian geology of south-central Onaman-Tashota greenstone belt; Ontario Geological Survey, Preliminary Map P.3352, scale 1:50 000.

[5] Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M. and Bowen, R.P. 1974. Operation Ignace-Armstrong, Caribou Lake-Pashkokogan Lake sheet, Thunder Bay, Ontario; Ontario Division of Mines, Preliminary Map P.962, scale 1:126 720.

OTHER REFERENCES:

Amukun, S.E. 1980b. Geology of the Conglomerate Lake area, District of Thunder Bay; Ontario Geological Survey, Report 197, 101p.

Amukun, S.E. 1977. Geology of the Tashota area, District of Thunder Bay; Ontario Geological Survey, Report 176, 90p.

Mason, J.K., White, G.D., O'Brien, M.S., Komar, C. and Stewart, J. 2001. Report of Activities 2000, Regional Resident Geologist Program, Thunder Bay North Regional Resident Geologist: Thunder Bay North District; Ontario Geological Survey, Open File Report 6048, p.1-49.

Ontario Geological Survey 1989. Airborne electromagnetic and total intensity magnetic survey, Tashota-Geraldton-Longlac area, District of Thunder Bay; Ontario Geological Survey, Maps 81259 to 81348, scale 1:20 000.

Intrusion Number	OTH-070	**Intrusion Name**	Jacobus					
Township/Area	Elmhirst	**Resident Geologist District**	Thunder Bay North					
Location Description	25 km NNE of Beardmore.							
Property Name		**Access**	Road					
Geological Setting	Syn-volcanic to syn-tectonic intrusion into intermediate volcanic rocks of the Elmhirst-Castlewood-Klotz belt							
Intrusion Age/Era	Neoarchean							
Geophysical Surveys								
Recent mapping	OGS Maps 2102[1], 2373[2], 2667[3], P.962[4]							
Morphology	Sill-like	**Strike**	070	**Dip**	050 N			
Size of Intrusion	Surface area ~2 sq. km							
Lithologies Present	Gabbro, quartz gabbro, metapyroxenite, anorthositic gabbro							
Distribution of Lithologies	Ultramafic << Mafic							
Metamorphic grade	Greenschist							
Alteration	Pervasive chloritization and sericitization							
Structure-Texture		**Strike**		**Dip**				
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Dacitic and andesitic metavolcanic rocks							
Nature of contact		**Strike**		**Dip**				
Material analyzed	Grab samples	**Sample Distribution**	10 samples					
Geochemical Characteristics: Please refer to figures 6, 8 and 10.								
Chemical affinity	Tholeiitic? Ti, Zr and Y ratios indicate contamination or enriched source							
Sulphide saturation	S-saturated							
Pd/Pt ratios	**Range**	0.22-1.04	**Median**	0.29	**Average**	0.52	**Number of Samples**	3
Pt + Pd (ppb)	**Range**	0.7-23.5	**Median**	8.0	**Average**	9.3	**Number of Samples**	6
Ni/Cu ratios	**Range**	0.16-3.47	**Median**	0.70	**Average**	1.35	**Number of Samples**	10
Total Ni (ppm)	**Range**	29-4424	**Median**	210	**Average**	937	**Number of Samples**	10
Total Cu (ppm)	**Range**	56-6022	**Median**	207	**Average**	1325	**Number of Samples**	10
Total sulphur (wt %)	**Range**	0.01-2.62	**Median**	0.10	**Average**	0.58	**Number of Samples**	9
Anomalies	Minor anomaly (24 ppb Pt+Pd) in melagabbro							
Hypothetical Source Region	Enriched or metasomatised source or crustal contamination							
Tectonic Setting	Mature convergent margin							
Mineralization Type	Unknown							
Potential for exploration	2 (low PGE values)							

MISCELLANEOUS NOTES:

The Pinel Creek Intrusion is located approximately 30 km northeast of Beardmore and is host to the Jacobus Prospect/Deposit. It is roughly elliptical in plan view, covering an approximately 2 km square area. The morphology of the intrusion is described as a sill-like body below surface that strikes 70NE and dips to the north at 50.[2] The estimated thickness for the intrusion is a minimum of 185 m.[5]

Lithologies within the Pinel Creek Intrusion include gabbro, quartz gabbro, metapyroxenite, and anorthositic gabbro (surface and drill core). On surface, only 2 lithologies were recognized: leucocratic gabbro and melanocratic gabbro with no apparent zonal arrangement of these rock types.[5] Drill hole data reveals a layered nature with the upper part of the intrusion consisting of quartz gabbro and quartz-rich leucocratic gabbro. Approximately 60 m below the upper contact, the intrusion becomes more melanocratic with alternating layers of leucocratic and melanocratic gabbro. One distinct 1.5 m thick metapyroxenite layer was noted as well as minor anorthositic gabbro. Extensive alteration of plagioclase and pyroxene is common with plagioclase altered to a combination of zoisite, epidote, sericite, and carbonate. Pyroxene is commonly altered to an assemblage of chlorite, hornblende, and actinolite.

Mineralization occurs as disseminated sulphides interstitial to the silicate minerals, and is concentrated mainly in the melanocratic gabbro phase of the intrusion located near the upper contact of the body. The Jacobus Prospect/Deposit is located near the northwestern contact of the body with the surrounding felsic to intermediate metavolcanic rocks. Reported reserves are 1 Mt at 0.94% Cu+Ni[6].

REFERENCES:

[1] Pye, E.G., Harris, F.R., Fenwick, K.G. and Baillie, J. 1966. Tashota-Geraldton sheet, geological compilation series, Thunder Bay and Cochrane districts; Ontario Geological Survey, Map 2102, scale 1:253 440.

[2] Mackasey, W.O. and Wallace, H. 1978. Geology of Elmhirst and Rickaby townships, District of Thunder Bay; Ontario Geological Survey, Report 168, 101p. Accompanied by Map 2373, scale 1:31 680.

[3] Johns, G.W., McIlraith, S. and Stott, G.M. 2003. Bedrock geology compilation map, Longlac sheet; Ontario Geological Survey, Map 2667, scale 1:250 000.

[4] Sage, R.P., Breaks, F.W., Stott, G.M., McWilliams, G.M. and Bowen, R.P. 1974. Operation Ignace-Armstrong, Caribou Lake-Pashkokogan Lake sheet, Thunder Bay, Ontario; Ontario Division of Mines, Preliminary Map P.962, scale 1:126 720.

[5] Faust, D. 1973. The petrochemistry, petrology, and economic geology of an Archean mafic intrusion in Elmhirst Township, Ontario; Unpublished BSc thesis, St. Francis Xavier University, Antigonish, Nova Scotia.

[6] Mason, J.K., Farrow, D., Seim, G., White, G.D., O'Brien, M.S., Walden, A. and Komar, C. 2000. Report of Activities 1999, Resident Geologist Program, Thunder Bay North Regional Resident Geologist Report: Thunder Bay North and Sioux Lookout districts; Ontario Geological Survey, Open File Report 6004, 62p.

OTHER REFERENCES:

Amukun, S.E. 1980. Geology of the Conglomerate Lake area, District of Thunder Bay; Ontario Geological Survey, Report 197, 101p. Accompanied by Map 2429, scale 1:31 680.
Shklanka, R. 1969. Copper, nickel, lead and zinc deposits of Ontario; Ontario Department of Mines, Mineral Resources Circular 12, p.286.
Mackasey, W.O. and Wallace, H. 1973. Elmhirst Township, District of Thunder Bay; Ontario Division of Mines, Preliminary Map P.801, scale 1:15 840.
Mason, J. and White, G. 1986. Gold occurrences, prospects and deposits of the Beardmore-Geraldton area, districts of Thunder Bay and Cochrane; Ontario Geological Survey, Open File Report 5630, 680p.
Ontario Geological Survey 1989. Tashota-Geraldton-Longlac area, airborne electromagnetic survey, total intensity magnetic survey, District of Thunder Bay; Ontario Geological Survey, Maps 81259 to 81348, scale 1:20 000.
Speed, A.A. 1982. Thunder Bay data series, Wilkinson Lake area, District of Thunder Bay; Ontario Geological Survey, Preliminary Map P.2514, scale 1:25 840.

Intrusion Number	OTH-071		**Intrusion Name**	Nipissing Diabase-Karalash Corners				
Township/Area	Van Koughnet		**Resident Geologist District**	Sault Ste. Marie				
Location Description								
Property Name					**Access**	Road		
Geological Setting	Rift-related diabasic intrusions into the Penokean Fold Belt							
Intrusion Age/Era	2.15-2.22 Ga (Corfu and Andrews 1985; Conrod 1989; Noble and Lightfoot 1992; Fairbairn et al. 1969; Van Schmus 1965; Kanasewich and Farquhar 1965 *in* Lightfoot and Naldrett 1996)[1]							
Geophysical Surveys								
Recent mapping	OGS Map 2419[2] and 2670[3]							
Morphology	arcuate							
Size of Intrusion	11-12 km by up to 1 km wide							
Lithologies Present	Gabbro, gabbronorite and hornblende gabbro							
Stratigraphic Sequence	Mafic							
Metamorphic grade	Sub-greenschist							
Alteration	Plagioclase and pyroxene are weakly to moderately sericitized, saussuritized and chloritized							
Structure-Texture	Undeformed, fine- to medium-grained inequigranular, hypidiomorphic granular and intergranular textures common							
Magma Dynamics								
Characteristic Mineralogy	Plagioclase-pyroxene-hornblende							
Crystallization Sequence								
Host rock	Mafic to intermediate metavolcanic rocks, metasediments and felsic to intermediate intrusive rocks							
Nature of contact	Intrusive				**Strike**		**Dip**	
Material analyzed	Grab sample		**Sample Distribution**	5 samples				
Geochemical Characteristics: Please refer to figures 20, 21 and 22.								
Chemical affinity	Tholeiitic. Zr, Ti and Y ratios indicate mildly enriched source or crustal contamination.							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.83-1.01	**Median**	0.89	**Average**	0.84	**Number of Samples**	3
Pt + Pd (ppb)	**Range**	1.0-58.4	**Median**	32.3	**Average**	31.0	**Number of Samples**	4
Ni/Cu ratios	**Range**	0.39-2.21	**Median**	0.82	**Average**	1.00	**Number of Samples**	5
Total Ni (ppm)	**Range**	51-139	**Median**	99	**Average**	98	**Number of Samples**	5
Total Cu (ppm)	**Range**	52-170	**Median**	130	**Average**	119	**Number of Samples**	5
Total sulphur (wt %)	**Range**	0.02-0.08	**Median**	0.05	**Average**	0.05	**Number of Samples**	5
Anomalies	Mildly anomalous							
Hypothetical Source Region	Depleted mantle to mildly enriched mantle							
Tectonic Setting	Rift							
Mineralization Type	Unknown							
Potential for exploration	3 (elevated PGE values overall, large magma system, but small sized intrusions)							

MISCELLANEOUS NOTES:

REFERENCES:

[1] Lightfoot, P.C. and Naldrett, A.J. 1996. Petrology and geochemistry of the Nipissing gabbro: exploration strategies for nickel, copper, and platinum group elements in a large igneous province; Ontario Geological Survey, Study 58, 81p.

[2] Giblin, P.E. and Leahy, E.J. 1979. Sault Ste. Marie-Elliot Lake, Geological Compilation Series, Algoma, Manitoulin and Sudbury Districts; Ontario Geological Survey, Map 2419, scale 1:253 440.

[3] Johns, G.W., McIlraith, S. and Muir, T.L. In Press. Bedrock geology compilation map–Sault Ste. Marie-Blind River sheet; Ontario Geological Survey, Map 2670, scale 1:250 000.

OTHER REFERENCES:

Conrod, D.M. and Naldrett, A.J. 1985. Petrology, geochemistry, isotopic studies, and platinum group element potential of the Nipissing diabase; Ontario Geological Survey, Miscellaneous Paper 127, p.206-222.

Conrod, D.M. 1988. Petrology, geochemistry and platinum group element potential of the Portage Bay, Cross Lake, and Bonanza Lake Nipissing Intrusions of Northern Ontario; unpublished MSc. thesis, University of Toronto, Toronto, Ontario, 494p.

Conrod, D.M. 1989. The petrology and geochemistry of the Duncan Lake, Beaton Bay, Milner, and Miller Lake Nipissing Intrusions within the Gowganda Area, District of Timiskaming; Ontario Geological Survey, Open File Report 5701, 210p.

Lightfoot, P.C., de Souza, H. and Doherty, W. 1993. Differentiation and source of the Nipissing Diabase intrusions, Ontario, Canada; Canadian Journal of Earth Sciences, v.30, p.123-1140.

Intrusion Number	OTH-072		**Intrusion Name**	Nipissing Diabase-Bruce Mines-Thessalon Area				
Township/Area	Plummer		**Resident Geologist District**	Sault Ste. Marie				
Location Description	62 km WSW of Elliot Lake, North Channel of Lake Superior							
Property Name							**Access**	Road
Geological Setting	Rift-related diabasic intrusions in the Penokean Fold Belt							
Intrusion Age/Era	2.15-2.22 Ga (Corfu and Andrews 1985; Conrod 1989; Noble and Lightfoot 1992; Fairbairn et al. 1969; Van Schmus 1965; Kanasewich and Farquhar 1965 *in* Lightfoot and Naldrett 1996)[1]							
Geophysical Surveys								
Recent mapping	OGS Map 2419[2]							
Morphology	Sill			**Strike**			**Dip**	
Size of Intrusion								
Lithologies Present	Gabbro, gabbronorite							
Stratigraphic Sequence	Mafic							
Metamorphic grade	Sub-greenschist							
Alteration	Weak to moderate chlorite, sericite and tremolite/actinolite alteration.							
Structure-Texture	Undeformed, fine- to coarse-grained inequigranular, intergranular to subophitic textures common							
Magma Dynamics								
Characteristic Mineralogy	Plagioclase-pyroxene-hornblende							
Crystallization Sequence								
Host rock	Metavolcanic rocks, intrusive rocks and metasediments							
Nature of contact					**Strike**		**Dip**	
Material analyzed			**Sample Distribution**	9 samples				
Geochemical Characteristics: Please refer to figures 20, 21 and 22.								
Chemical affinity	Tholeiitic. Zr, Ti and Y ratios indicate mildly enriched source or crustal contamination.							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.56-1.69	**Median**	1.08	**Average**	1.04	**Number of Samples**	5
Pt + Pd (ppb)	**Range**	1.0-63.1	**Median**	22.0	**Average**	25.6	**Number of Samples**	6
Ni/Cu ratios	**Range**	0.54-1.44	**Median**	0.89	**Average**	0.95	**Number of Samples**	9
Total Ni (ppm)	**Range**	40-154	**Median**	116	**Average**	104	**Number of Samples**	9
Total Cu (ppm)	**Range**	54-152	**Median**	106	**Average**	108	**Number of Samples**	9
Total sulphur (wt %)	**Range**	0.04-0.14	**Median**	0.07	**Average**	0.09	**Number of Samples**	9
Anomalies	Mildly anomalous							
Hypothetical Source Region	Depleted mantle to mildly enriched mantle							
Tectonic Setting	Rift							
Mineralization Type	Unknown							
Potential for exploration	3 (Elevated PGE values in general, large magma system, but small sized intrusions)							

MISCELLANEOUS NOTES:

The following descriptive summary is based on published work by Lightfoot and Naldrett (1996)[1] and Lightfoot et al. (1993)[3].
The 2.15-2.22 Ga Nipissing Diabase sills occur over a wide area between Sault Ste. Marie in the west and Cobalt in the east. The intrusions are bound to the north by the Abitibi greenstone-granite terrane, and to the south by the Grenville fault-thrust zone. Generally, these rocks are confined to the 2450 Ma Huronian metasedimentary supracrustal belt, but smaller diabase intrusions cut Archean granite, gneisses, metasedimentary and metavolcanic rocks at the margin of the belt. Emplacement usually occurs along bedding planes or unconformities, but also cuts the Huronian stratigraphy and the Huronian/Archean unconformity. Exposed surfaces of the intrusions form arc-like expressions derived from the erosion of undulatory shaped sills. The undulatory nature of the differentiated Nipissing Diabase sills reflects considerable variation in petrography and mineralogy. The laterally continuous basinal areas of the undulating sills are composed dominantly of hypersthene diabase and varitextured diabase, whereas the arched zones are composed of coarse pegmatoidal varitextured diabase, granophyric diabase and locally aplite. Fine-grained basal quartz occurs ubiquitously along the lower contact and gets coarser from the chilled margin toward the hypersthene gabbro.

REFERENCES:

[1]Lightfoot, P.C. and Naldrett, A.J. 1996. Petrology and geochemistry of the Nipissing gabbro: exploration strategies for nickel, copper, and platinum group elements in a large igneous province; Ontario Geological Survey, Study 58, 81p.
[2]Giblin, P.E. and Leahy, E.J. 1979. Sault Ste. Marie-Elliot Lake, Geological Compilation Series, Algoma, Manitoulin and Sudbury Districts; Ontario Geological Survey, Map 2419, scale 1:253 440.
[3]Lightfoot, P.C., de Souza, H. and Doherty, W. 1993. Differentiation and source of the Nipissing Diabase intrusions, Ontario, Canada; Canadian Journal of Earth Sciences, v.30, 6, p.1123-1140.

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Johns, G.W., McIlraith, S. and Muir, T.L. In Press. Bedrock geology compilation map- Sault Ste. Marie-Blind River sheet; Ontario Geological Survey, Map 2670, scale 1:250 000.

Kanasewich, A.F. and Farquhar, R.M. 1965. Lead isotope ratios from the Cobalt-Noranda area, Canada; Canadian Journal of Earth Sciences, v.2, p.361-384.

Knight, C.W. 1915. The north shore of Lake Huron, Ontario; Ontario Department of Mines, Annual Report, p.216-241.

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Schmus, W.R. 1964. The geochronology of the Blind River-Bruce mines area, Ontario, Canada; unpublished PhD thesis, University of California, Los Angeles, California, 112p.

Van Schmus, R. 1965. The Geochronology of the Blind River-Bruce Mines Area, Ontario; Canadian Journal of Geology, v.23, p.755-780.

Intrusion Number	OTH-073		**Intrusion Name**	Nipissing Diabase-Rose Township-Basswood Lake				
Township/Area	Rose, Day, Bright		**Resident Geologist District**	Sault Ste. Marie				
Location Description	48 km WSW of Elliot Lake							
Property Name							**Access**	Road
Geological Setting	Rift-related diabasic intrusions in the Penokean Fold Belt							
Intrusion Age/Era	2.15-2.22 Ga (Corfu and Andrews 1985; Conrod 1989; Noble and Lightfoot 1992; Fairbairn et al. 1969; Van Schmus 1965; Kanasewich and Farquhar 1965 in Lightfoot and Naldrett 1996)[1]							
Geophysical Surveys								
Recent mapping	OGS Maps 2419[2] and 2670[3]							
Morphology	Sill			**Strike**		**Dip**		
Size of Intrusion								
Lithologies Present	Gabbro, gabbronorite							
Stratigraphic Sequence	Mafic							
Metamorphic grade	Sub-greenschist							
Alteration	Weak to moderate sericite, epidotite, chlorite and tremolite actinolite alteration							
Structure-Texture				**Strike**		**Dip**		
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Mafic to intermediate metavolcanic rocks, metasediments and felsic to intermediate intrusive rocks							
Nature of contact	Intrusive				**Strike**	**Dip**		
Material analyzed	Grab		**Sample Distribution**	18 samples				
Geochemical Characteristics: Please refer to figures 20, 21 and 22.								
Chemical affinity	Tholeiitic. Zr, Ti and Y ratios indicate mildly enriched source or crustal contamination.							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.39-1.81	**Median**	0.63	**Average**	0.83	**Number of Samples**	10
Pt + Pd (ppb)	**Range**	1.0-35.4	**Median**	18.3	**Average**	16.3	**Number of Samples**	12
Ni/Cu ratios	**Range**	0.16-5.00	**Median**	0.44	**Average**	0.80	**Number of Samples**	18
Total Ni (ppm)	**Range**	22-125	**Median**	59	**Average**	66	**Number of Samples**	18
Total Cu (ppm)	**Range**	6-316	**Median**	135	**Average**	154	**Number of Samples**	18
Total sulphur (wt %)	**Range**	0.03-0.14	**Median**	0.07	**Average**	0.07	**Number of Samples**	18
Anomalies	Mildly anomalous							
Hypothetical Source Region	Depleted mantle to mildly enriched mantle							
Tectonic Setting	Rift							
Mineralization Type	Unknown							
Potential for exploration	3 (good background PGE numbers, large magma system, but small sized intrusions)							

MISCELLANEOUS NOTES: Rose Basswood

The following descriptive summary is based on published work by Lightfoot et al. (1993)[4] and Lightfoot and Naldrett (1996)[1].

The 2.15-2.22 Ga Nipissing Diabase sills occur over a wide area between Sault Ste. Marie in the west and Cobalt in the east. The intrusions are bound to the north by the Abitibi greenstone-granite terrane, and to the south by the Grenville fault-thrust zone. Generally, these rocks are confined to the 2450 Ma Huronian metasedimentary supracrustal belt, but smaller diabase intrusions cut Archean granite, gneisses, metasedimentary and metavolcanic rocks at the margin of the belt. Emplacement usually occurs along bedding planes or unconformities, but also cuts the Huronian stratigraphy and the Huronian/Archean unconformity. Exposed surfaces of the intrusions form arc-like expressions derived from the erosion of undulatory shaped sills. The undulatory nature of the differentiated Nipissing Diabase sills reflects considerable variation in petrography and mineralogy. The laterally continuous basinal areas of the undulating sills are composed dominantly of hypersthene diabase and varitextured diabase, whereas the arched zones are composed of course pegmatoidal varitextured diabase, granophyric diabase and locally aplite. Fine-grained basal quartz occurs ubiquitously along the lower contact and gets coarser from the chilled margin toward the hypersthene gabbro.[1,4]

The Basswood Lake intrusion is located 48 km west-southwest of Elliot Lake. The southern margin of this intrusion is heavily sheared and contains chalcopyrite-bearing, quartz-carbonate veins. Most of the intrusion is relatively unaltered. The road cut through Highway 129 provides a well-exposed section through the basal and upper portions of this sill. From south to north, quartz diabase grades rapidly into hypersthene diabase with varitextured patches, followed by abrupt changes to granophyric diabase, which in turn is gradational to quartz diorite. Locally, the granophyric diabase is pegmatoidal and contains pods of disseminated pyrite and pyrrhotite. These sulphides do not contain Au, Pt and Pd. The granophyric diabase laterally grades into quartz diabase. This lateral transition consists of massive granophyric diabase through to granophyric diabase with quartz diabase pods, then into quartz diorite with course granophyric diabase pods, and finally into a medium-grained quartz diabase. Roof rocks are absent from this sill.[4]

REFERENCES:

[1] Lightfoot, P.C. and Naldrett, A.J. 1996. Petrology and geochemistry of the Nipissing gabbro: exploration strategies for nickel, copper, and platinum group elements in a large igneous province; Ontario Geological Survey, Study 58, 81p.

[2] Giblin, P.E. and Leahy, E.J. 1979. Sault Ste. Marie-Elliot Lake, Geological Compilation Series, Algoma, Manitoulin and Sudbury Districts; Ontario Geological Survey, Map 2419, scale 1:253 440.

Johns, G.W., McIlwaith, S. and Muir, T.L. In Press. Bedrock geology compilation map: Sault Ste. Marie-Blind River sheet; Ontario Geological Survey, Map 2670, scale 1:250 000.

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Fairbairn, H.W., Hurley, P.M., Card, K.D. and Knight, C.J. 1969. Correlation of radiometric ages of Nipissing Diabase and Huronian metasediments with Proterozoic orogenic events in Ontario; Canadian Journal of Earth Sciences, v.6, p.489-497.

Kanasewich, A.F. and Farquhar, R.M. 1965. Lead isotope ratios from the Cobalt-Noranda area, Canada; Canadian Journal of Earth Sciences, v.2, p.361-384.

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Van Schmus, R. 1965. The Geochronology of the Blind River-Bruce Mines Area, Ontario; Canadian Journal of Geology, v.73, p.755-780.

Williams, H.J.C. 1907. The Bruce mines, Ontario, 1846-1906; Canadian Mining Journal, p.47-51.

Intrusion Number	OTB-073		**Intrusion Name**	Sun Rise Lake area				
Township Area	Esquega		**Resident Geologist District**	Timmins				
Location Description								
Property Name							**Access**	Road
Geological Setting	Synvolcanic? Small subrounded body intruding mafic metavolcanic rocks of the Michipicoten greenstone belt							
Intrusion Age/Era	Archean							
Geophysical Surveys								
Recent mapping	OGS Report 5586							
Morphology	Subrounded							
Size of Intrusion	~150 m by 50 m							
Lithologies Present	Leucogabbro, mesogabbro, melagabbro							
Distribution of Lithologies	Ultramafic < Mafic							
Metamorphic grade	Amphibolite							
Alteration	Chlorite, sericite, hematite							
Structure–Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence	Clinopyroxene-plagioclase							
Host rocks	Mafic metavolcanic rocks							
Nature of contact								
Material analysed	Grab sample		**Sample Distribution**	7 samples				
Geochemical Characteristics: Please refer to figures 14, 15 and 16.								
Chemical affinity	Fe tholeiitic. Zr/Y ratios indicate MORB-like source							
Sulphide (S) saturation	S-saturated and S-undersaturated							
Pd/Pt ratios	**Range**	1.00-1.49	**Median**	1.20	**Average**	1.23	**Number of Samples**	7
Pt + Pd (ppb)	**Range**	0.9-35.4	**Median**	19.0	**Average**	17.3	**Number of Samples**	7
Ni/Cu ratios	**Range**	0.22-2.74	**Median**	1.20	**Average**	1.08	**Number of Samples**	7
Total Ni (ppm)	**Range**	14-104	**Median**	79	**Average**	61	**Number of Samples**	7
Total Cu (ppm)	**Range**	14-200	**Median**	31	**Average**	61	**Number of Samples**	7
Total sulphur (wt %)	**Range**	0.01-24.00	**Median**	0.10	**Average**	7.00	**Number of Samples**	7
Anomalies	Minor PGE anomalies associated with high sulphide							
Hypothetical Source Region	Depleted mantle (more data required)?							
Tectonic Setting	Rifted arc							
Mineralization Type	Type 1							
Potential for exploration	2 (Moderate PGE anomalies but associated with abundant sulfides)							

MISCELLANEOUS NOTES:

Barren basal massive and disseminated sulfides.

REFERENCES:

¹Sage, R.P. 1993. Geology of Chabanel, Esquega, Lastheels and McMurray Townships, District of Algoma; Ontario Geological Survey, Open File Report 5586, 462p.

OTHER REFERENCES:

Santaguida, F. 2001. Precambrian geology compilation series, Thunder Bay sheet; Ontario Geological Survey, Map 2666, scale 1:250 000.

Intrusion Number	OTB 076	**Intrusion Name**	Pelletier
Township Area	Pelletier, Doherty	**Resident Geologist District**	Timmins
Location Description	South of Hearst		
Property Name		**Access**	Road
Geological Setting	Synvolcanic? Small intrusion located in intermediate to felsic metavolcanic rocks and metasediments in the high grade Kapuskasing structure		
Intrusion Age/Era	Archean		
Geophysical Surveys			
Recent mapping	OGS Map P.2961¹		
Morphology	Dumbbell shape		
Size of Intrusion	~1 km in width and ~5 km in length		
Lithologies Present	Gabbro, monzonite		
Distribution of Lithologies	Mafic		
Metamorphic grade	Amphibolite		
Alteration	Weak to pervasive chloritization, sericitization and rare epidotization		
Structure/Texture			
Magma Dynamics			
Characteristic Mineralogy			
Crystallization Sequence			
Host rocks	Metavolcanic rocks (intermediate to felsic) and metasedimentary rocks		
Nature of contact			
Material analysed	Grab sample	**Sample Distribution**	8 samples

Geochemical Characteristics: Please refer to figures 14, 15 and 16.

Chemical affinity	Unclear affinities							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	0.76-2.00	**Median**	1.13	**Average**	1.26	**Number of Samples**	8
Pt + Pd (ppb)	**Range**	4.1-17.4	**Median**	6.1	**Average**	8.4	**Number of Samples**	8
Ni/Cu ratios	**Range**	1.56-44.00	**Median**	2.25	**Average**	12.67	**Number of Samples**	8
Total Ni (ppm)	**Range**	49-224	**Median**	70	**Average**	105	**Number of Samples**	8
Total Cu (ppm)	**Range**	5-38	**Median**	30	**Average**	26	**Number of Samples**	8
Total sulphur (wt %)	**Range**	0.01-0.04	**Median**	0.02	**Average**	0.02	**Number of Samples**	8

Anomalies	Moderately high PGE values
Hypothetical Source Region	Unknown
Tectonic Setting	Unknown
Mineralization Type	Unknown
Potential for exploration	2.5 (moderately high PGE values, but small size of intrusion)

MISCELLANEOUS NOTES:

The intrusion is composed of gabbro to monzonites, and is potentially thought to have sanukitoid affinities. The intrusion is poorly exposed.

REFERENCES:

¹Berger, B., MacMillan, D.W. and Roy, P.L. 1986. Precambrian geology, Caithness, and parts of Scholfield, Pelletier and Doherty townships, Hearst-Kapuskasing area, Algoma and Cochrane districts; Ontario Geological Survey, Preliminary Map P.2961, scale 1:50 000.

OTHER REFERENCES:

Bennett, G., Brown, D.D., George, P.T. and Leahy, E.J. 1969. Hearst-Kapuskasing Sheet, Geological Compilation Series, Algoma and Cochrane Districts; Ontario Geological Survey, Map 2106, scale 1:253 440.

Intrusion Number:	[illegible]	**Intrusion Name:**	Abitibi Canyon/Pinard Intrusion				
Township/Area:	Pinard Twp.	**Resident Geologist District:**	Timmins				
Location Description:	30 km SSE of Otter Rapids						
Property Name:		**Access:**	Boat				
Geological Setting:	Syn- to post-tectonic						
Intrusion Age/Era:							
Geophysical Surveys:							
Recent mapping:	ODM Map 2065						
Morphology:	Sill-like						
Size of Intrusion:	~2.5 km by 12 km						
Lithologies Present:	Gabbro, olivine gabbro						
Distribution of Lithologies:	Mafic						
Metamorphic grade:	Greenschist						
Alteration:	Weak chloritization and sericitization						
Structure/Texture:							
Magma Dynamics:							
Characteristic Mineralogy:							
Crystallization Sequence:							
Host rocks:	Paragneiss						
Nature of contact:							
Material analyzed:	Grab sample	**Sample Distribution:**	7 samples				
Geochemical Characteristics: Please refer to figures 17, 18 and 19.							
Chemical affinity:	High Fe tholeiitic						
Sulphide (S) saturation:	S-saturated						
Pd/Pt ratio:	**Range:**	**Median:**		**Average:**		**Number of Samples:**	0
Pt + Pd (ppb):	**Range:** <5	**Median:** [illegible]		**Average:** [illegible]		**Number of Samples:**	[illegible]
Ni/Cu ratio:	**Range:** 0.15-1.10	**Median:** 0.33		**Average:** 0.62		**Number of Samples:**	7
Total Ni (ppm):	**Range:** 13-108	**Median:** 67		**Average:** 59		**Number of Samples:**	7
Total Cu (ppm):	**Range:** 29-175	**Median:** 96		**Average:** 102		**Number of Samples:**	7
Total sulphur (wt %):	**Range:** 0.06-0.28	**Median:** 0.13		**Average:** 0.17		**Number of Samples:**	7
Anomalies:	None						
Hypothetical Source:	Insufficient data						
Region:							
Tectonic Setting:	Unknown						
Mineralization Type:	Unknown						
Potential for exploration:	Low (low PGE values)						

MISCELLANEOUS NOTES:

The Abitibi Canyon Mafic Complex is located 30 km south-southeast of Otter Rapids in Pinard Township. The mafic intrusive rocks are exposed in the gorge below the dam at Abitibi Canyon and along the Abitibi River and its tributaries south of the dam. The size of this complex is based on aeromagnetic data. There is a possibility that this intrusion is of Proterozoic age.

The rocks exposed below the dam are composed of fresh, massive, medium grained, equigranular, dark grey gabbro. These rocks contain inclusions of apparently layered mafic intrusive material. Mineralogically, the gabbro consists of clinopyroxene, plagioclase, olivine, biotite, magnetite, and quartz.

REFERENCES:

Bennett, G., Brown, D.D. and George, P.T. 1966. Coral Rapids-Cochrane Sheet, Cochrane District; Ontario Department of Mines, Bedrock Geology Map 2065, scale 1:253 440.

OTHER REFERENCES:

Bennett, G., Brown, D.D., George, P.T. and Leahy, E.J. 1967. Operation Kapuskasing; Ontario Department of Mines, Miscellaneous Paper 10, p.1-75.
MacLaren, A.S., Anderson, D.T., Fortescue, J.A.C., Gaucher, E.G., Brambrooke, E.G.W. and Skinner, R. 1968. A preliminary study of the Moose River belt, Northern Ontario; Geological Survey of Canada, Paper 67-38, 48p. (includes Map 9-1967).

Intrusion Number	OTH-078	**Intrusion Name**	Montcalm Gabbroic Complex					
Township/Area	Montcalm, Strachan, Nova, Belford	**Resident Geologist District**	Timmins					
Location Description	~15 km NW of Timmins							
Property Name	Falconbridge Ltd.	**Access**	Road					
Geological Setting	A synvolcanic mafic body intruding into the metavolcanics (mafic to intermediate) of the Abitibi greenstone belt.							
Intrusion Age/Era	2702 Ma[1]							
Geophysical Surveys								
Recent mapping	OGS Maps OFM 237[2], OFM 238[3], 2205[4], 2640[5], 2642[5], 2643[5], P.3262[6], P.3263[6], P.3308[7]							
Morphology	Crescent shape							
Size of Intrusion								
Lithologies Present	Pyroxenite, gabbro-anorthosite, ferroan-gabbro and megabreccia[8]							
Distribution of Lithologies	Ultramafic = Mafic							
Metamorphic grade	Greenschist							
Alteration								
Structure-Texture	Layers of medium- to coarse-grained magnetite-bearing gabbro[6]	**Strike**	300°	**Dip**	53° to the NE[6]			
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Fe-rich tholeiitic basalts, calc-alkaline andesites and dacite							
Nature of contact								
Material analyzed	Drill core*	**Sample Distribution**	31 samples*					
Geochemical Characteristics: Please refer to figures 17, 18 and 19.								
Chemical affinity	Tholeiitic. MORB to E-MORB like source.							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	0.45-2.43	**Median**	0.95	**Average**	1.26	**Number of Samples**	6
Pt + Pd (ppb)	**Range**	1.0-38.7	**Median**	7.4	**Average**	10.2	**Number of Samples**	8
Ni/Cu ratios	**Range**	0.38-133.00	**Median**	7.48	**Average**	11.45	**Number of Samples**	31
Total Ni (ppm)	**Range**	60-26303	**Median**	275	**Average**	1842	**Number of Samples**	31
Total Cu (ppm)	**Range**	2-15506	**Median**	36	**Average**	855	**Number of Samples**	31
Total sulphur (wt %)	**Range**	0.01-22.50	**Median**	0.06	**Average**	1.29	**Number of Samples**	31
Anomalies	Low PGE background numbers. Low tenor Ni ore.							
Hypothetical Source Region	Depleted mantle to mildly enriched mantle (lithospheric).							
Tectonic Setting	Rifted arc							
Mineralization Type	Type I							
Potential for exploration	Located deposit							

MISCELLANEOUS NOTES:

The Montcalm Gabbroic Complex is approximately 85 km^2 in size and irregularly shaped.[4] The intrusion is very poorly exposed. It is found in four areas: Montcalm, Nova, Belford and Strachan Townships. The complex is crudely layered (layers are overturned[6]), variably altered melagabbro, gabbro, leucogabbro, pyroxene hornblendite and hornblende pyroxenite and peridotite. Dikes, veins and pegmatites are common. The intrusion is divided into the pyroxenite zone (PZ), gabbro-anorthosite zone (GZ), the ferroan gabbro zone (FZ), and the gabbro-megabreccia zone (GMBZ)[8].

**Falconbridge Ltd.*

REFERENCES:

[1] Barrie, C.T. and Davis, D.W. 1990. Timing of magmatism and deformation in the Kamiskotia-Kidd Creek area, Western Abitibi Subprovince, Canada; Precambrian Research, v.46, p.217-240.

[2] MacTavish, A.D. and Fitzhenry, K.L. 1993. Precambrian Geology, Nova Township; Ontario Geological Survey, Open File Map 237, scale 1:20 000.

[3] MacTavish, A.D. and Fitzhenry, K.L. 1993. Precambrian Geology, Strachan Township; Ontario Geological Survey, Open File Map 238, scale 1:20 000.

[4] Pyke, D.R., Ayres, L.D. and Innes, D.G. 1973. Timmins-Kirkland Lake, Geological Compilation Series, Cochrane, Sudbury and Timiskaming Districts; Ontario Geological Survey, Bedrock Geology Map 2205, scale 1:253 440.

[5] MacTavish, A.D. 1996. Precambrian Geology, Montcalm Greenstone Belt; Ontario Geological Survey, Geoscience Report 300, 76p. (includes Maps 2640 to 2643).

[6] MacTavish, A.D. 1994. Precambrian Geology of Nova and Strachan Townships, District of Cochrane; Ontario Geological Survey, Open File Report 5895, 60p. (includes Preliminary Maps P.3262 and P.3263).

[7] MacTavish, A.D. and Henderson, I.G. 1994. Precambrian Geology, Montcalm Township; Ontario Geological Survey, Preliminary Map P.3308, scale 1:20 000.

[8] Barrie, C.T., Naldrett, A.J. and Davis, D.W. 1990. Geochemical constraints on the genesis of the Montcalm gabbroic complex and Ni-Cu deposit, western Abitibi Subprovince, Ontario; The Canadian Mineralogist, v.28, no.3, p.451-474.

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Bennett, G. 1969. Geology of the Belford-Strachan area, District of Cochrane; Ontario Department of Mines, Geological Report 78, 30p.
Hunt, D.S., MacRae, B.A. and Maharaj, D. 1980. Timmins Data Series, Montcalm Township, District of Cochrane, Ontario; Ontario Geological Survey, Map P.2111, scale 1:15 840.

Intrusion Number	OTH-079	**Intrusion Name**	Loveland					
Township/Area	Loveland, MacDiarmid	**Resident Geologist District**	Timmins					
Location Description	23 km west of Timmins							
Property Name	Loveland Township (Explorers Alliance)	**Access**	Road, trail					
Geological Setting	Syntectonic?							
Intrusion Age/Era	Neoarchean.							
Geophysical Surveys								
Recent mapping	OGS Maps 2205[1], 2288[2]							
Morphology								
Size of Intrusion								
Lithologies Present	Gabbro							
Distribution of Lithologies	Dominantly mafic							
Metamorphic grade	Greenschist							
Alteration								
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Mafic metavolcanic rocks and granites							
Nature of contact	unclear due to lack of exposure – intrusive nature inferred							
Material analyzed	Drill core*	**Sample Distribution**	13 samples*					
Geochemical Characteristics: Please refer to figures 17, 18 and 19.								
Chemical affinity	High Fe-Mg-Tholeiitic. Zr, Ti and Y ratios indicate MORB to E-MORB-like source.							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	1.22-11.88	**Median**	4.14	**Average**	5.34	**Number of Samples**	8
Pt + Pd (ppb)	**Range**	0.5-1679.7	**Median**	10.6	**Average**	239.6	**Number of Samples**	11
Ni/Cu ratios	**Range**	0.11-28.00	**Median**	3.00	**Average**	6.17	**Number of Samples**	13
Total Ni (ppm)	**Range**	31-7838	**Median**	189	**Average**	1147	**Number of Samples**	13
Total Cu (ppm)	**Range**	5-7838	**Median**	69	**Average**	2614	**Number of Samples**	8
Total sulphur (wt %)	**Range**	0.01-5.35	**Median**	0.14	**Average**	1.30	**Number of Samples**	11
Anomalies	Up to 1680 ppb Pt+Pd. The intrusion displays elevated PGE values in general.							
Hypothetical Source Region	Depleted mantle to enriched mantle (lithospheric?)							
Tectonic Setting	Rifted arc							
Mineralization Type	Type I (located at basal contact)							
Potential for exploration	2-3 (elevated PGE values overall, tholeiitic, some samples are S-undersaturated)							

MISCELLANEOUS NOTES:

The Loveland intrusion is composed of medium-grained gabbro. There is no outcrop.

**Drill core was kindly provided by Explorers Alliance*

REFERENCES:

[1] Pyke, D.R., Ayres, L.D. and Innes, D.G. 1973. Timmins-Kirkland Lake, Geological Compilation Series, Cochrane, Sudbury and Timiskaming Districts; Ontario Geological Survey, Bedrock Geology Map 2205, scale 1:253 440.
[2] Middleton, R.S. 1974. Loveland and Macdiarmid Townships, Cochrane District; Ontario Geological Survey, Map 2288, scale 1:31 680.

OTHER REFERENCES:

Middleton, R.S. 1972. Magnetic survey of Loveland and Macdiarmid Townships, District of Cochrane; Ontario Geological Survey, Open File Report 5070, 41p.
Middleton, R.S. 1974. Magnetic survey of Loveland and Macdiarmid Townships, District of Cochrane; Ontario Division of Mines, Geophysical Report 2, 26p (accompanied by Map 2288).

Intrusion Number	OTH-080	**Intrusion Name**	Kamiskotia					
Township/Area	Whitesides, Massey, Carscallen, Robb	**Resident Geologist District**	Timmins					
Location Description	23 km west of Timmins							
Property Name		**Access**	Road					
Geological Setting	Syn- to post-volcanic intrusion at the boundary between metavolcanic rocks, metasediments and granitic gneiss							
Intrusion Age/Era	2707 ± 2 Ma[1]							
Geophysical Surveys								
Recent mapping	P. 3296[2], Map 2205[3]							
Morphology	Arcuate							
Size of Intrusion	~80 by 15 km							
Lithologies Present	Serpentine, peridotite, gabbronorite to orthopyroxene gabbro, gabbro							
Stratigraphic Sequence	Ultramafic < Mafic							
Metamorphic grade	Greenschist							
Alteration	Weak to pervasive serpentinization, chloritization, sericitization and replacement of ferromagnesian minerals by actinolite-tremolite.							
Structure-Texture	Banding in the gabbro; oriented inclusions	**Strike**	300° to 320°	**Dip**				
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence	Olivine – plagioclase – clinopyroxene - hornblende							
Host rocks	Metavolcanic rocks and metasediments to the N, E and SE, and foliated granitic gneiss to the W.							
Nature of contact	Intrusive	**Strike**		**Dip**				
Material analyzed	Grab sample	**Sample Distribution**	27 samples					
Geochemical Characteristics: Please refer to figures 17, 18 and 19.								
Chemical affinity	Tholeiitic. Zr and Y ratios indicate MORB-like magma.							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.13-1.73	**Median**	0.84	**Average**	0.88	**Number of Samples**	12
Pt + Pd (ppb)	**Range**	0.8-110.5	**Median**	13.8	**Average**	19.3	**Number of Samples**	17
Ni/Cu ratios	**Range**	0.26-56.07	**Median**	1.22	**Average**	4.46	**Number of Samples**	27
Total Ni (ppm)	**Range**	39-1682	**Median**	77	**Average**	282	**Number of Samples**	27
Total Cu (ppm)	**Range**	17-758	**Median**	96	**Average**	135	**Number of Samples**	27
Total sulphur (wt %)	**Range**	0.01-0.21	**Median**	0.09	**Average**	0.10	**Number of Samples**	27
Anomalies	Moderately elevated PGE values							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Rifted arc							
Mineralization Type	Unknown							
Potential for exploration	2							

MISCELLANEOUS NOTES:

The Kamiskotia Gabbroic Complex is divided into four zones: 1) a Lower Zone composed of troctolite, olivine gabbro and melagabbro, 2) a Middle Zone of massive and anorthositic gabbro, 3) an Upper Zone of locally layered anorthositic gabbro, and 4) an intermediate to felsic granophyric rock that occurs along strike with the Upper Zone[1]. Hornblendite, some diorite and minor coarse pegmatitic phases are also locally present.

REFERENCES:

[1] Barrie, C.T. and Davis, D.W. 1990. Timing of magmatism and deformation in the Kamiskotia-Kidd Creek area, Western Abitibi Subprovince, Canada; Precambrian Research, v.46, p.217-240.

[2] Barrie, C.T. 2000. Geology of the Kamiskotia area; Ontario Geological Survey, Study 59, 79p. (includes map P.3296).

[3] Pyke, D.R., Ayres, L.D. and Innes, D.G. 1973. Timmins-Kirkland Lake, Geological Compilation Series, Cochrane, Sudbury and Timiskaming Districts; Ontario Geological Survey, Bedrock Geology Map 2205, scale 1:253 440.

OTHER REFERENCES:

Berry, L.G. 1946. Geology of the Robb-Jamieson Area, Cochrane District, Ontario; Ontario Department of Mines, Annual Report, 1944, v.53, pt.4, p.1-16.

Finley, F.L. 1925. Kamiskotia Gold Area, District of Cochrane, Ontario; Ontario Department of Mines, Annual Report, 1925, v.34, pt.6, p.43-64.

George, P.T., Pyke, E.R., Fisher, D.F. and Ransom, D.M. 1975. Precambrian Economic Geology of the Timmins Area; *in* University of Waterloo Field Excursions Guidebook, The Geological Association of Canada-The Mineralogical Association of Canada-Geological Society of America, Field Trip 3, p.63-96.

Goodwin, A.M. and Ridler, R.H. 1970. The Abitibi Orogenic Belt; *in* Symposium on Basins and Geosynclines of the Canadian Shield, Geological Survey of Canada, Paper 70-40, p.1-31.

Intrusion Number	OTH-081		**Intrusion Name**	Cunningham-Garnet				
Township/Area	Cunningham, Garnet		**Resident Geologist District**	Timmins				
Location Description	12.5 km NNE of Sultan; map area is located 177 km north of Sudbury.							
Property Name							**Access**	Road
Geological Setting	Synvolcanic mafic intrusion(s) hosted within metavolcanic and metasedimentary rocks of the Swayze greenstone belt (Abitibi west)							
Intrusion Age/Era	~2730-2725 Ma[1] or 2710-2703 Ma[1]							
Geophysical Surveys								
Recent mapping	OGS Map 2361[2]							
Morphology	Irregular, may represent a number of chambers							
Size of Intrusion	Up to 1 km by 5 km, ~200 m in thickness							
Lithologies Present	Dunite, lherzolite, wehrlite, melagabbro, mesogabbro, leucogabbro, quartz gabbro							
Distribution of Lithologies	Ultramafic = Mafic							
Metamorphic grade	Greenschist							
Alteration	Moderate to pervasive sericitization, chloritization and serpentinization							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence	Olivine(-chromite) – plagioclase – clinopyroxene							
Host rocks	Metavolcanic rocks and metasedimentary rocks of the Swayze greenstone belt							
Nature of contact	Intrusive							
Material analyzed	Grab sample		**Sample Distribution**	24 samples				
Geochemical Characteristics: Please refer to figures 17, 18 and 19.								
Chemical affinity	High Fe-tholeiite. Ti, Zr and Y ratios indicated MORB-like source.							
Sulphide (S) saturation	Mostly S-saturated							
Pd/Pt ratios	**Range**	0.64-3.38	**Median**	1.23	**Average**	1.40	**Number of Samples**	12
Pt + Pd (ppb)	**Range**	0.7-182.2	**Median**	5.7	**Average**	16.6	**Number of Samples**	18
Ni/Cu ratios	**Range**	0.07-137.11	**Median**	1.10	**Average**	16.17	**Number of Samples**	24
Total Ni (ppm)	**Range**	44-1497	**Median**	87	**Average**	427	**Number of Samples**	24
Total Cu (ppm)	**Range**	9-1345	**Median**	73	**Average**	166	**Number of Samples**	24
Total sulphur (wt %)	**Range**	0.01-0.57	**Median**	0.05	**Average**	0.09	**Number of Samples**	23
Anomalies	Up to 182 ppb Pt+Pd in dunite/lherzolite. High PGE values overall.							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Rifted arc							
Mineralization Type	Unknown							
Potential for exploration	2 (elevated PGE values overall)							

MISCELLANEOUS NOTES:

The intrusions are located in the Swayze Belt, an extension of the Abitibi greenstone belt (Ayer et al. 2002). The inferred synvolcanic nature of the intrusion(s) and their apparent stratigraphic position within metavolcanic and metasedimentary rocks of the Swayze greenstone belt would suggest an age equivalent to that of the Deloro assemblage (2730-2725 Ma[1]) or Tisdale assemblage (2710-2703 Ma[1]).

Mafic intrusive rocks that outcrop within Cunningham and Garnet Townships include granodiorite, quartz gabbro, gabbro and quartz diabase. These intrusive bodies are generally irregularly shaped and have a maximum length of 4 km, with the largest of these bodies located in Cunningham Township near Peter Lake and south of Mink Lake. In outcrop, these rocks are typically coarse grained, range in color from light-grey to dark-green, and may resemble the coarse portions of lava flows observed in the surrounding/hosting metavolcanic rocks. Compositional and textural similarities with the hosting metavolcanic successions would further suggest a synvolcanic nature for these intrusions, however lava flows generally show more schistosity and alteration than the intrusive rocks.

Ultramafic intrusive rocks occur in the southeastern part of Cunningham Township and consist mainly of altered peridotite. Diorite bodies observed on the north and south parts of this peridotite body may suggest one large differentiated intrusion, but field relationships are unclear. Although moderately pervasively altered (serpentine, chlorite, sericite), the peridotite has retained much of its original coarse-grained textures and mineralogy. In thin section, most of the olivine is altered to serpentine but a few remnant grains are found with pyroxene.

REFERENCES:

[1]Ayer, J.A., Amelin, Y., Corfu, F., Ketchum, J., Kwok, K. and Trowell, N.F. 2002. Evolution of the southern Abitibi greenstone belt based on U-Pb geochronology: autochthonous volcanic construction followed by plutonism, regional deformation and sedimentation; Precambrian Research, v.115, p.63-95.

[2]Card, K.D. and Lumbers, S.B. 1977. Sudbury-Cobalt, geological compilation series, Algoma, Manitoulin, Nipissing, Parry Sound, Sudbury and Timiskaming districts; Ontario Geological Survey, Map 2361, scale 1:253 440.

OTHER REFERENCES:

Heather, K.B. and Shore, G.T. 1999. Geology, Swayze greenstone belt, Ontario; Geological Survey of Canada, Open File 3384 (includes maps 3384a to 3384i, scale 1:50 000).
Meen, V.B. 1944. Geology of the Cunningham-Garnet Area, Sudbury District, Ontario; Ontario Department of Mines, Annual Report, 1944, v.51, pt.7, p.1-26.
Siragusa, G.M. 1987. Geology of the Garnet Lake area, District of Sudbury; Ontario Geological Survey, Geoscience Report 248, 81p. (includes Maps 2503 and 2504).
Thurston, P.C., Siragusa, G.M. and Sage, R.P. 1977. Geology of Chapleau Area, Districts of Algoma, Sudbury and Cochrane, Ontario; Ontario Division of Mines, Geoscience Report 157, 293p. (includes Maps 2221, 2351, and 2352).

Intrusion Number	OTH-082	**Intrusion Name**	Sothman				
Township/Area	Sothman	**Resident Geologist District**	Timmins				
Location Description	70 km S of Timmins						
Property Name		**Access**	Road				
Geological Setting	Synvolcanic or extrusive						
Intrusion Age/Era	2710-2703 Ma[1]						
Geophysical Surveys							
Recent mapping	OGS Map 2205[2]						
Morphology	Tabular						
Size of Intrusion	~1 km by 2 km and ~500 m in thickness						
Lithologies Present	Peridotite, olivine-pyroxenite						
Distribution of Lithologies	Ultramafic						
Metamorphic grade	Greenschist						
Alteration	Pervasive sericitization and serpentinization						
Structure-Texture							
Magma Dynamics							
Characteristic Mineralogy							
Crystallization Sequence	Olivine-pyroxene						
Host rocks	Intermediate metavolcanic rocks						
Nature of contact	Intrusive synvolcanic or extrusive?						
Material analyzed	Grab	**Sample Distribution**	6 samples				
Geochemical Characteristics: Please refer to figures 17, 18 and 19.							
Chemical affinity	Komatiitic basalt						
Sulphide (S) saturation	S-undersaturated						
Pd/Pt ratios	**Range** 0.94-2.35	**Median**	2.32	**Average**	1.84	**Number of Samples**	5
Pt + Pd (ppb)	**Range** 3.9-610	**Median**	12.1	**Average**	144.4	**Number of Samples**	5
Ni/Cu ratios	**Range** 8.66-258.57	**Median**	51.67	**Average**	84.39	**Number of Samples**	5
Total Ni (ppm)	**Range** 56-26554	**Median**	1809	**Average**	6183	**Number of Samples**	6
Total Cu (ppm)	**Range** 6-2091	**Median**	20	**Average**	576	**Number of Samples**	5
Total sulphur (wt %)	**Range** 0.01-7.89	**Median**	0.18	**Average**	1.89	**Number of Samples**	6
Anomalies	610 ppb Pt+Pd in net-textured ore.						
Hypothetical Source Region	Depleted mantle (plume?)						
Tectonic Setting	Rifted arc						
Mineralization Type	Type 1						
Potential for exploration	4 (High tenor komatiite-hosted Ni ore)						

MISCELLANEOUS NOTES:

Ultramafic rocks in Sothman Township are composed dominantly of peridotite. The Sothman Ni-Cu-PGE deposit is hosted in a thick ultramafic body with a dunite core and a peridotite margin that is interpreted to be a sill. The mineralization occurs ~0.8 m above the basal contact, and is composed of net-textured sulphides, disseminated sulphides and barren olivine pyroxenite.

Note: The ultramafic rocks within Sothman Township may contain both intrusive (synvolcanic) and extrusive components and thus be either coeval with the Tisdale assemblage in which it occurs or form an extrusive part of the (2718-2710 Ma[1]) Tisdale assemblage.

REFERENCES:

[1] Ayer, J.A., Amelin, Y., Corfu, F., Ketchum, J., Kwok, K. and Trowell, N.F. 2002. Evolution of the southern Abitibi greenstone belt based on U-Pb geochronology: autochthonous volcanic construction followed by plutonism, regional deformation and sedimentation; Precambrian Research, v.115, p.63-95.

[2] Pyke, D.R., Ayres, L.D. and Innes, D.G. 1973. Timmins-Kirkland Lake, Geological Compilation Series, Cochrane, Sudbury and Timiskaming Districts; Ontario Geological Survey, Bedrock Geology Map 2205, scale 1:253 440.

OTHER REFERENCES:

Abraham, E.M. 1954. Geology of Sothman Township; Ontario Department of Mines, 1953 Annual Report, v.62, pt.6, 36p. (includes Map 1953-3).

Houle, M., Lesher, C.M., Gibson, H.L., Fowler, A.D. and Sproule, R.A. 2001. Project Unit 99-021. Physical volcanology of komatiites in the Abitibi greenstone belt; *in* Summary of Field Work 2001, Ontario Geological Survey, Open File Report 6070, p.13-1 to 13-17.

Watkins, J.J. 1972. The Sothman sill nickel deposit; unpublished BSc thesis, Queen's University, Kingston, Ontario, 32p.

Intrusion Number	OTH-083	**Intrusion Name**	Peterlong Lake
Township/Area	Bartlett, English, McArthur	**Resident Geologist District**	Timmins
Location Description	29.4 km south of Timmins		
Property Name		**Access**	Boat
Geological Setting	Synvolcanic intrusion?		
Intrusion Age/Era	possibly coeval with Deloro Assemblage (2730-2725 Ma[1])		
Geophysical Surveys			
Recent mapping	OGS Map 2345[2]		
Morphology	Sill-like		
Size of Intrusion	3 km by 15 km and ~500 m in thickness		
Lithologies Present	Pyroxenite, melagabbro, anorthositic gabbro, quartz gabbro		
Distribution of Lithologies	Ultramafic << Mafic		
Metamorphic grade	Greenschist		
Alteration			
Structure-Texture			
Magma Dynamics			
Characteristic Mineralogy			
Crystallization Sequence	Clinopyroxene, plagioclase-clinopyroxene, quartz		
Host rock	Metavolcanic rocks and metasediments		
Nature of contact			
Material analyzed	Grab sample	**Sample Distribution**	13 samples

Geochemical Characteristics: Please refer to figures 17, 18 and 19.

Chemical affinity	High Fe-tholeiite. Ti, Zr and Y ratios indicate a MORB-like source.							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	1.34	**Median**	1.34	**Average**	1.34	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	0.8-1.7	**Median**	1.4	**Average**	1.3	**Number of Samples**	3
Ni/Cu ratios	**Range**	0.19-53.40	**Median**	0.80	**Average**	6.97	**Number of Samples**	13
Total Ni (ppm)	**Range**	17-534	**Median**	62	**Average**	167	**Number of Samples**	13
Total Cu (ppm)	**Range**	10-261	**Median**	70	**Average**	89	**Number of Samples**	13
Total sulphur (wt %)	**Range**	0.01-0.26	**Median**	0.03	**Average**	0.05	**Number of Samples**	12

Anomalies	None
Hypothetical Source Region	Depleted mantle
Tectonic Setting	Rifted arc
Mineralization Type	Unknown
Potential for exploration	1 (low PGE values)

MISCELLANEOUS NOTES:

The Muskasenda gabbro is a sill-like body emplaced along the contact between mafic (Pacaud Assemblage 2750-2735 Ma[1]) and intermediate to felsic (Deloro Assemblage 2730-2725 Ma[1]) metavolcanics in the Muskasenda Lake area. This intrusion consists of abundant melanocratic gabbro with subordinate phases of anorthositic gabbro, quartz gabbro and minor pyroxenite. Typically, these rocks are massive, medium-grained equigranular to ophitic with local glomeroporphyritic-type texture common particularly in outcrops on Muskasenda Lake. Locally, compositional layering is present in the gabbro on two scales: individual layers range from 30 to 90 m thick and on a smaller scale the individual layers range from 2.5 to 60 cm thick. A chilled upper contact with fine-grained tuffs or siltstones and cherty metasedimentary rocks are located on the eastern shore of Muskasenda Lake approximately 0.8 km north of the English-Bartlett Township.

In thin section the gabbro consists of plagioclase that is altered to clinozoisite, lesser epidote and minor chlorite, calcite and sodic plagioclase. Pale green, weakly pleochroic hornblende constitutes 40 to 70% of the gabbro and commonly forms semi-equant grains 2 to 3 mm in length. The amphibole is commonly uralitized and is partly altered to chlorite. In the anorthositic gabbro, the hornblende constitutes approximately 25 to 30% of the rock and may be pervasively altered to chlorite, carbonate and quartz. Common minor phases consist of quartz and titaniferous magnetite present in amounts from 2 to 6%. The titaniferous magnetite is commonly altered to leucoxene. In the quartz gabbro, the plagioclase (An_{20-30}) is not saussuritized to the same degree as the gabbro. The hornblende forms anhedral strongly poikilitic grains with irregular boundaries. One pyroxenite specimen contained 85% pale green actinolitic hornblende, 12% chlorite and 3% leucoxene.

Dikes composed of diabase, fine-grained gabbro, quartz gabbro and diorite and abundant veins and stockworks of quartz and epidote intrude the gabbro. Two diatreme dikes intrude the gabbro near the south end and northeastern shore of Muskasenda Lake. Blue opaline quartz is a common constituent of the quartz gabbro and dioritic dikes and is also present as a minor phase in the intruded gabbro.

REFERENCES:

[1] Ayer, J.A., Amelin, Y., Corfu, F., Ketchum, J., Kwok, K. and Trowell, N.F. 2002. Evolution of the southern Abitibi greenstone belt based on U-Pb geochronology: autochthonous volcanic construction followed by plutonism, regional deformation and sedimentation: Precambrian Research, v.115, p.63-95.
[2] Pyke, D.R. 1978. Geology of the Peterlong Lake Area, Districts of Timiskaming and Sudbury, Ontario; Ontario Geological Survey, Report 171, 53p (includes Map 2345, scale 1:50 000).

OTHER REFERENCES:

Bruce, E.L. 1927. Geology of McArthur, Bartlett, Douglas and Geikie Townships, (Redstone River Area), Timiskaming District, Ontario; Ontario Department of Mines, Annual Report, 1926, v.35, pt.6, p.37-56.
Pyke, D.R. 1971. Bartlett and Geikie Townships, District of Timiskaming; *in* Summary of Field Work 1971, Ontario Department of Mines and Northern Affairs, Miscellaneous Paper 49, p.63-67.
Pyke, D.R. 1978. Geology of the Redstone River Area, District of Timiskaming, Ontario; Ontario Division of Mines, Geological Report 161, 75p. (includes Maps 2363 and 2364).

Intrusion Number	OTH-084	**Intrusion Name**	Dundonald					
Township/Area	Dundonald, Clergue	**Resident Geologist District**	Timmins					
Location Description	50 km NE of Timmins							
Property Name	Dundonald beach, Hucamp Mines Ltd.	**Access**	Road					
Geological Setting	Synvolcanic intrusion located in dacite and andesite package in the Abitibi greenstone belt							
Intrusion Age/Era	~2703 ± 3 Ma[1]							
Geophysical Surveys								
Recent mapping	OGS Maps 2205[2], P.3394[3]							
Morphology	Elongate sill							
Size of Intrusion	~20 km by 0.5 km (before folding) with ~800 m in thickness							
Lithologies Present	Peridotite, pyroxenite, gabbro							
Distribution of Lithologies	Ultramafic = Mafic							
Metamorphic grade	Greenschist							
Alteration	Intermediate intensity pervasive sericitization, serpentinization and chloritization							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Metadacite-meta-andesite							
Nature of contact								
Material analyzed	Grab sample and drill core*	**Sample Distribution**	32 samples					
Geochemical Characteristics: Please refer to figures 17, 18 and 19.								
Chemical affinity	High Mg-Tholeiitic. Ti-Zr-Y ratios indicated MORB-like magma							
Sulphide (S) saturation	S-saturated to S-undersaturated							
Pd/Pt ratios	**Range**	0.20-2.90	**Median**	1.26	**Average**	1.35	**Number of Samples**	19
Pt + Pd (ppb)	**Range**	0.5-1115.1	**Median**	12.5	**Average**	122.3	**Number of Samples**	24
Ni/Cu ratios	**Range**	0.01-177.1	**Median**	4.08	**Average**	15.47	**Number of Samples**	31
Total Ni (ppm)	**Range**	3-2889	**Median**	350	**Average**	621	**Number of Samples**	31
Total Cu (ppm)	**Range**	10-993	**Median**	97	**Average**	211	**Number of Samples**	32
Total sulphur (wt %)	**Range**	0.01-0.92	**Median**	0.03	**Average**	0.08	**Number of Samples**	26
Anomalies	Up to 1112 ppb Pt+Pd in pyroxenite. High background numbers.							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Rifted arc							
Mineralization Type	Type II							
Potential for exploration	4 (high PGE values)							

MISCELLANEOUS NOTES:

The Dundonald Sill extends for 20 km along strike and is up to 0.8 km in true thickness, and clearly cuts the adjacent volcanic strata[1]. In general the sill is composed of a medium-grained cumulate peridotite base with pyroxenite layers and locally olivine-rich layers (up to 60% relict olivine and 6% chromite)[1]. The olivine-rich base is approximately ~230 m in thickness and is overlain by a modally-layered pyroxenite unit (~200 m in thickness), which is in turn overlain by a gabbro unit (~50-200 m in thickness). Minor PGE anomalies (0.6 ppm) are present at surface in the gabbro[1].

**Hucamp Mines Ltd.*

REFERENCES:

[1]Barrie, C.T., Corfu, F., Davis, P., Coutts, A.C. and MacEachern, D. 1999. Geochemistry of the Dundonald Komatiite-Basalt Suite and genesis of Dundeal Ni deposit, Abitibi Subprovince, Canada; Economic Geology and the Bulletin of the Society of Economic Geologists, v.94, p.845-866.
[2]Pyke, D.R., Ayres, L.D. and Innes, D.G. 1973. Timmins-Kirkland Lake, Geological Compilation Series, Cochrane, Sudbury and Timiskaming Districts; Ontario Geological Survey, Bedrock Geology Map 2205, scale 1:253 440.
[3]Barrie, C.T. 1999. Dundonald and Clergue Townships, Ontario; Ontario Geological Survey, Preliminary Map P.3394, scale 1:20 000.

OTHER REFERENCES:

Naldrett, A.J. and Mason, G.D. 1968. Contrasting Archean ultramafic igneous bodies in Dundonald and Clergue Townships, Ontario; Canadian Journal of Earth Sciences, v.5, no.1, p.111-143.
Pearce, T.H. 1969. Some comments on the differentiation of the Dundonald sill, Ontario; Canadian Journal of Earth Sciences, v.6, no.1, p.75-80.

Intrusion Number	OTH-085	**Intrusion Name**	Mann intrusion
Township/Area	Mann, Newmarket, McCart	**Resident Geologist District**	Timmins
Location Description	46 km NE of Timmins		
Property Name	Tres-Or Resources Ltd., Falconbridge Ltd.	**Access**	Road
Geological Setting	Synvolcanic mafic intrusion into greenstone belt metavolcanics and sediments		
Intrusion Age/Era	~2704 ± 5 Ma[1]		
Geophysical Surveys			
Recent mapping	OGS Maps 2205[2], P.14[3], P.754[4]		
Morphology	Elongate ranging from one thick intrusion up to thinner multiple sills		
Size of Intrusion	~40 km by ~2 km (before folding) with up to 1.5 km in thickness		
Lithologies Present	Dunite, lherzolite, clinopyroxenite, melagabbro, gabbro, leucogabbro		
Distribution of Lithologies	Ultramafic > Mafic		
Metamorphic grade	Greenschist		
Alteration	Pervasive chloritization, sericitization and serpentinization. Weak carbonatization.		
Structure-Texture	Differentiated		
Magma Dynamics	Layered		
Characteristic Mineralogy			
Crystallization Sequence			
Host rock	Metavolcanic rocks and metasediments		
Nature of contact			
Material analyzed	Grab sample and drill core*	**Sample Distribution**	42 samples throughout stratigraphy

Geochemical Characteristics: Please refer to figures 17, 18 and 19.

Chemical affinity	High Mg-Fe tholeiite. Ti, Zr and Y ratios indicated MORB-like magma							
Sulphide (S) saturation	S-saturated to S-undersaturated							
Pd/Pt ratios	**Range**	0.16-3.84	**Median**	0.80	**Average**	1.06	**Number of Samples**	26
Pt + Pd (ppb)	**Range**	0.5-750.3	**Median**	7.9	**Average**	41.6	**Number of Samples**	32
Ni/Cu ratios	**Range**	0.14-445.25	**Median**	64.88	**Average**	114.49	**Number of Samples**	42
Total Ni (ppm)	**Range**	4-2311	**Median**	1495	**Average**	1118.9	**Number of Samples**	42
Total Cu (ppm)	**Range**	3-893	**Median**	15	**Average**	54.7	**Number of Samples**	42
Total sulphur (wt %)	**Range**	0.01-0.13	**Median**	0.02	**Average**	0.03	**Number of Samples**	30

Anomalies	Up to 750 ppb Pt+Pd in clinopyroxenites. Low to intermediate PGE values.
Hypothetical Source Region	Depleted mantle
Tectonic Setting	Rifted arc
Mineralization Type	Type II
Potential for exploration	2 (low to intermediate PGE values)

MISCELLANEOUS NOTES:

The Reaume-McCart Sills or Mann intrusion is a complex intrusive body that may be composed of a series of sills (up to 11 sills) in the western section or may be a single layered intrusion (eastern section?). The intrusion is composed of various lithologies: peridotite, pyroxenite, troctolite, olivine gabbro and gabbro, and appears to be more ultramafic in character on the western end. Grades of ~7 g/t Pd have been reported from a thin (~1 m in thickness) extensively chloritized clinopyroxenite (layer? or individual sill?)[5,6].

**Tres-Or Resources Ltd. and Falconbridge Ltd.*

REFERENCES:

[1] Barrie, C.T. 1999. The Kidd-Munro Extension Project, Year 3 Report, Unpublished Report, 263p.
[2] Pyke, D.R., Ayres, L.D. and Innes, D.G. 1973. Timmins-Kirkland Lake, Geological Compilation Series, Cochrane, Sudbury and Timiskaming Districts; Ontario Geological Survey, Bedrock Geology Map 2205, scale 1:253 440.
[3] Satterly, J. 1959. Mann Township, District of Cochrane, Ontario; Ontario Department of Mines, Preliminary Map P.14, scale 1:15 840.
[4] Bright, E.G. and Hunt, D.S 1972. Timmins Data Series, Thorburn Township, District of Cochrane, Ontario; Ontario Division of Mines, Preliminary Map P.754, scale 1:15 840.
[5] Good, D.J. and Crocket, J.H. 1999. Geology of the Mann intrusive complex and evidence for Pt-rich hydrothermal platinum-group elements; Economic Geology Monographs, v.10, p.613-625.
[6] Good, D.J. and Crocket, J.H. 1997. A secondary clinopyroxene-chlorite-spinel assemblage in clinopyroxenite of the Mann Complex, Abitibi Belt, Ontario: an unusual hydrothermal alteration suite; Mineralogy and Petrology, v.59, p.69-90.

Intrusion Number	OTH 006			**Intrusion Name**	Garrison Intrusion			
Township Area	Garrison			**Resident Geologist District**	Kirkland Lake			
Location Description	33 km east of Matheson							
Property Name							**Access**	Road
Geological Setting	Synvolcanic intrusion hosted in metavolcanic and metasedimentary rocks of the Abitibi greenstone belt							
Intrusion Age/Era	~2708-2703 Ma[1]							
Geophysical Surveys								
Recent mapping	OGS Map 2205[2]							
Morphology	Elongate sill							
Size of Intrusion	~2.4 km long, 762 m thick							
Lithologies Present	Dunite, lherzolite, mesogabbro, hornblende gabbro							
Distribution of Lithologies	Ultramafic > Mafic							
Metamorphic grade	Greenschist							
Alteration	Moderate to pervasive chloritization and serpentinization. Trace carbonatization and hematitization.							
Structure-Texture	Layered							
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence	Olivine, plagioclase, clinopyroxene							
Host rocks	Metavolcanic rocks and sediments							
Nature of contact								
Material analyzed	Grab sample			**Sample Distribution**	30 samples			
Geochemical Characteristics: Please refer figures 17, 18 and 19.								
Chemical affinity	High Fe-Mg tholeiite. Ti, Zr and Y ratios indicate MORB-like source.							
Sulphide (S) saturation	S-undersaturated and S-saturated							
Pd/Pt ratios	**Range**	0.51-2.71	**Median**	0.98	**Average**	1.35	**Number of Samples**	7
Pt + Pd (ppb)	**Range**	10.0-132.2	**Median**	39.7	**Average**	61.4	**Number of Samples**	7
Ni/Cu ratios	**Range**	0.03-260.89	**Median**	1.17	**Average**	29.76	**Number of Samples**	14
Total Ni (ppm)	**Range**	3-2434	**Median**	112	**Average**	645	**Number of Samples**	15
Total Cu (ppm)	**Range**	9-736	**Median**	102	**Average**	199	**Number of Samples**	14
Total sulphur (wt %)	**Range**	0.01-0.13	**Median**	0.02	**Average**	0.03	**Number of Samples**	30
Anomalies	Up to 132 ppb Pt+Pd. High PGE values in general.							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Rifted arc							
Mineralization Type	Unknown							
Potential for exploration	3							

MISCELLANEOUS NOTES:

South of Lake Abitibi, several sill-like, differentiated intrusions of peridotite, clinopyroxenite and gabbro form a 48.3 km segment of a 128.8 km long belt of ultramafic-gabbroic rocks that extend north of Timmins to just east of the Ontario-Quebec border. These sill-like intrusions may be categorized into four main types: 1) complex sills of repeating layers, 2) differentiated sills with a single sequence of peridotite-clinopyroxene-gabbro, 3) wholly ultramafic sills, and 4) wholly gabbroic sills.

The Garrison sill is a conformable east-west trending sill exposed along a ridge 2.4 km long. The exposed width is 244 m but geophysical data suggests a total thickness of approximately 762 m. Stratigraphically, this sill contains a 91.5 km thick gabbroic zone and a 671 m thick ultramafic zone.

The Garrison intrusion is suggested to be synvolcanic[3], thus the intrusion age is suggested to be coeval with that of the Tisdale assemblage in which it intrudes (2708-2703 Ma[1]).

REFERENCES:

[1] Ayer, J.A., Amelin, Y., Corfu, F., Kamo, S., Ketchum, J., Kwok, K. and Trowell, N.F. 2002. Evolution of the southern Abitibi greenstone belt based on U-Pb geochronology: autochthonous volcanic construction followed by plutonism, regional deformation and sedimentation. Precambrian Research, v.115, p.63-95.
[2] Pyke, D.R., Ayres, L.D. and Innes, D.G. 1973. Timmins-Kirkland Lake, Geological Compilation Series, Cochrane, Sudbury and Timiskaming Districts; Ontario Geological Survey, Bedrock Geology Map 2205, scale 1:253 440.
[3] This study

OTHER REFERENCES:

Goodwin, A.M., Ridler, R.H. and Annells, R.N. 1972. Precambrian Volcanism of the Noranda-Kirkland Lake-Timmins-Michipicoten and Mamainse Point Areas, Quebec and Ontario; 24th International Geological Congress Guidebook, Field Excursion A40-C40.
MacRae, N.D. 1969. Ultramafic Intrusions of the Abitibi Area, Ontario; Canadian Journal of Earth Sciences, v.6, p.281-304.
Satterly, J. 1953. Geology of McCool Township, Cochrane District, Ontario; Ontario Department of Mines, Annual Report 1952, v.61, pt.5.

Intrusion Number	OTH-067			**Intrusion Name**	Centre Hill			
Township Area	Munro			**Resident Geologist District**	Kirkland Lake			
Location Description	20 km E of Matheson							
Property Name							**Access**	Road
Geological Setting								
Intrusion Age/Era	2705 ± 1 Ma[1]							
Geophysical Surveys								
Recent mapping	OGS Maps 2205[2], P.3395[3]							
Morphology	Elongate							
Size of Intrusion	~10 km by ~1 km							
Lithologies Present	Peridotite, pyroxenite, gabbro, leucogabbro							
Distribution of Lithologies	Ultramafic = Mafic							
Metamorphic grade	Greenschist							
Alteration	Weak to pervasive chloritization and serpentinization							
Structure-Texture	Layered							
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Komatiites, mafic and intermediate metavolcanic rocks of the Kidd-Munro Assemblage							
Nature of contact								
Material analyzed	Grab sample			**Sample Distribution**	22 samples			
Geochemical Characteristics: Please refer to figures 17, 18 and 19.								
Chemical affinity	Tholeiitic. Zr, Y and Ti ratios indicated a MORB-like source							
Sulphide (S) saturation	S-saturated and S-undersaturated (mostly S-undersaturated)							
Pd/Pt ratios	**Range**	0.62-4.56	**Median**	1.02	**Average**	1.49	**Number of Samples**	14
Pt + Pd (ppb)	**Range**	0.6-341.8	**Median**	15.3	**Average**	72.1	**Number of Samples**	17
Ni/Cu ratios	**Range**	0.17-382.50	**Median**	2.13	**Average**	38.67	**Number of Samples**	20
Total Ni (ppm)	**Range**	32-1823	**Median**	266	**Average**	479	**Number of Samples**	20
Total Cu (ppm)	**Range**	4-632	**Median**	83	**Average**	132	**Number of Samples**	22
Total sulphur (wt %)	**Range**	0.01-0.83	**Median**	0.04	**Average**	0.09	**Number of Samples**	19
Anomalies	Up to 342 ppb Pt+Pd at ultramafic-mafic contact							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Rifted arc							
Mineralization Type	Type II							
Potential for exploration	3							

MISCELLANEOUS NOTES:

South of Lake Abitibi, several sill-like, differentiated intrusions of peridotite, clinopyroxenite and gabbro form a 48.3 km segment of a 128.8 km long belt of ultramafic-gabbroic rocks that extend north of Timmins to just east of the Ontario-Quebec border. These sill-like intrusions may be categorized into four main types: 1) complex sills of repeating layers, 2) differentiated sills with a single sequence of peridotite-clinopyroxenite-gabbro, 3) wholly ultramafic sills, and 4) wholly gabbroic sills.

The Centre Hill Complex in general is composed of rhythmically layered peridotite and pyroxenite that is overlain by gabbro to leucogabbro. The Centre Hill outcrop area is the only area of the complex that shows a complete stratigraphic section and subsequently has allowed for identification of a lower marginal zone and an upper layered series. The lower marginal zone consists of a massive hornblende peridotite with rounded olivine grains and minor tiny crystals of chromite enclosed within medium grained, reddish brown, platy hornblende. The layered series consists of a lower ultramafic zone and an upper gabbroic zone. Several different types of igneous layering in the Centre Hill complex include mineral graded layering or phase layering and rhythmic layering, the latter of which is particularly common in the lower layers of the gabbroic zone. Other types of layering are characterized by layers of pyroxene crystals oriented normal to the plane of layering and small-scale interbanding of melanogabbro and gabbro with local contortions and cross laminations. The intrusion is adjacent to the Potter VMS Mine.

Note: The age of the Centre Hill Complex is inferred to be coeval with that of the Munro-Warden Sill (2705 ± 1 Ma[1]).

REFERENCES:

[1]Barrie, C.T. 1999. The Kidd-Munro Extension Project, Year 3 Report, Unpublished Report, 263p.
[2]Pyke, D.R., Ayres, L.D. and Innes, D.G. 1973. Timmins-Kirkland Lake, Geological Compilation Series, Cochrane, Sudbury and Timiskaming Districts; Ontario Geological Survey, Bedrock Geology Map 2205, scale 1:253 440.
[3]Barrie, C.T. 1999. Beatty and Munro Townships; Ontario Geological Survey, Preliminary Map P.3395, scale 1:20 000.

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Thériault, R.D. and Fowler, A.D. 1995. Harrisitic textures in the Centre Hill Complex, Munro Township, Ontario: product of diffusion-limited growth. Mineralogy and Petrology, v.54, no 1-2, p.35-44.

Thériault, R.D. and Fowler, A.D. 1996. Gravity driven and in situ fractional crystallization processes in the Centre Hill Complex, Abitibi Subprovince, Canada: evidence from bilaterally-paired cyclic units. Lithos, v.39, no 1-2, p.41-55.

Intrusion Number	OTH-088	**Intrusion Name**	Munro				
Township/Area	Munro, McCool	**Resident Geologist District**	Kirkland Lake				
Location Description	19 km east of Matheson						
Property Name						**Access**	Road
Geological Setting	Synvolcanic intrusion into mafic metavolcanics and metasedimentary rocks of the Abitibi greenstone belt						
Intrusion Age/Era	2705 ± 1 Ma[1]						
Geophysical Surveys							
Recent mapping	OGS Map 2205[2]						
Morphology	Elongate sill						
Size of Intrusion	20 km by ~2 km with ~700 m in thickness						
Lithologies Present	Dunite, lherzolite, clinopyroxenite, gabbro						
Distribution of Lithologies	Ultramafic > Mafic						
Metamorphic grade	Greenschist						
Alteration							
Structure-Texture							
Magma Dynamics							
Characteristic Mineralogy							
Crystallization Sequence							
Host rock	Mafic metavolcanic rocks and metasediments						
Nature of contact	Intrusive						
Material analyzed	Grab sample		**Sample Distribution**				
Geochemical Characteristics: Please refer to figures 17, 18 and 19.							
Chemical affinity	High Fe-tholeiite. Zr:Y indicate MORB-like source.						
Sulphide (S) saturation	S-saturated to S-undersaturated						
Pd/Pt ratios	**Range** 0.24-2.60	**Median**	1.55	**Average**	1.40	**Number of Samples**	14
Pt + Pd (ppb)	**Range** 4.9-61.8	**Median**	18.6	**Average**	22.2	**Number of Samples**	14
Ni/Cu ratios	**Range** 0.33-334.57	**Median**	1.18	**Average**	25.17	**Number of Samples**	20
Total Ni (ppm)	**Range** 7-2342	**Median**	274	**Average**	731	**Number of Samples**	20
Total Cu (ppm)	**Range** 7-578	**Median**	90	**Average**	130	**Number of Samples**	20
Total sulphur (wt %)	**Range** 0.01-0.46	**Median**	0.10	**Average**	0.14	**Number of Samples**	18
Anomalies	Good background PGE						
Hypothetical Source Region	Depleted mantle						
Tectonic Setting	Rifted arc						
Mineralization Type	Unknown						
Potential for exploration	2 (elevated PGE values in general)						

MISCELLANEOUS NOTES:

South of Lake Abitibi, several sill-like, differentiated intrusions of peridotite, clinopyroxenite and gabbro form a 48.3 km segment of a 128.8 km long belt of ultramafic-gabbroic rocks that extend from north of Timmins to just east of the Ontario-Quebec border. These sill-like intrusions may be categorized into four main types: 1) complex sills of repeating layers, 2) differentiated sills with a single sequence of peridotite-clinopyroxene-gabbro, 3) wholly ultramafic sills, and 4) wholly gabbroic sills.

REFERENCES:

[1] Barrie, C.T. 1999. The Kidd-Munro Extension Project, Year 3 Report, Unpublished Report, 263p.
[2] Pyke, D.R., Ayres, L.D. and Innes, D.G. 1973. Timmins-Kirkland Lake, Geological Compilation Series, Cochrane, Sudbury and Timiskaming Districts; Ontario Geological Survey, Bedrock Geology Map 2205, scale 1:253 440.

OTHER REFERENCES:

Goodwin, A.M., Ridler, R.H. and Annells, R.N. 1972. Precambrian Volcanism of the Noranda-Kirkland Lake-Timmins-Michipicoten and Mamainse Point Areas, Quebec and Ontario; 24th International Geological Congress Guidebook, Field Excursion A40-C40.
MacRae, N.D. 1969. Ultramafic Intrusions of the Abitibi Area, Ontario; Canadian Journal of Earth Sciences, v.6, p.281-304.
Satterly, J. 1953. Geology of McCool Township, Cochrane District, Ontario; Ontario Department of Mines, Annual Report, 1952, v.61, pt.5.

Intrusion Number	OTH-089	**Intrusion Name**	Lake Abitibi
Township/Area	Sulphur Island Area	**Resident Geologist District**	Kirkland Lake
Location Description	93 km E of Matheson		
Property Name		**Access**	Road, trail
Geological Setting	Syntectonic to post-tectonic intrusion into tonalite gneiss		
Intrusion Age/Era	Neoarchean		
Geophysical Surveys			
Recent mapping	OGS Maps 2205[1], P.3398[2]		
Morphology	Rounded		
Size of Intrusion	~6 km by 7 km		
Lithologies Present	Gabbro, diorite		
Distribution of Lithologies	Mafic - Intermediate		
Metamorphic grade	Greenschist		
Alteration	Pervasive sericitization and epidotization and replacement of ferromagnesian minerals by actinolite-tremolite		
Structure-Texture			
Magma Dynamics			
Characteristic Mineralogy			
Crystallization Sequence			
Host rocks	Tonalite gneiss		
Nature of contact			
Material analyzed	Grab sample	**Sample Distribution**	3 samples

Geochemical Characteristics: Please refer to figures 17, 18 and 19.

Chemical affinity	Tholeiitic, displays MORB-like Zr/Y ratios							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Pt + Pd (ppb)	**Range**	0.9	**Median**	0.9	**Average**	0.9	**Number of Samples**	1
Ni/Cu ratios	**Range**	0.36-2.87	**Median**	0.66	**Average**	1.29	**Number of Samples**	3
Total Ni (ppm)	**Range**	58-132	**Median**	94	**Average**	95	**Number of Samples**	3
Total Cu (ppm)	**Range**	46-163	**Median**	143	**Average**	117	**Number of Samples**	3
Total sulphur (wt %)	**Range**	0.05-0.31	**Median**	0.18	**Average**	0.18	**Number of Samples**	3

Anomalies	None
Hypothetical Source Region	Depleted mantle
Tectonic Setting	Convergent margin (based on regional geology)
Mineralization Type	Unknown
Potential for exploration	1

MISCELLANEOUS NOTES:

The intrusion is poorly exposed (in outcrop) and is made up of gabbro to diorite. Sanukitoid affinities have been suggested by Smith and Sutcliffe (1988)[3].

REFERENCES:

[1]Pyke, D.R., Ayres, L.D. and Innes, D.G. 1973. Timmins-Kirkland Lake, Geological Compilation Series, Cochrane, Sudbury and Timiskaming Districts; Ontario Geological Survey, Bedrock Geology Map 2205, scale 1:253 440.

[2]Ayer, J.A., Berger, B.R. and Trowell, N.F. 1999. Geological compilation of the Lake Abitibi area, Abitibi greenstone belt; Ontario Geological Survey, Preliminary Map P.3398, scale 1:100 000.

[3]Smith, A.R. and Sutcliffe, R. 1988. Project Number 88-08. Plutonic rocks of the Abitibi subprovince; *in* Summary of Field Work and Other Activities, Ontario Geological Survey, Miscellaneous Paper 141, p.188-196.

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Jensen, L.S. 1982. Precambrian Geology of the Ghost Range area, Lightning River area, Cochrane District, Ontario; Ontario Geological Survey, Preliminary Map P.2431, scale 1:15 840.

Jensen, L.S. 1982. Precambrian Geology of the Lightning Mountain area, Lightning River area, Cochrane District, Ontario; Ontario Geological Survey, Preliminary Map P.2432, scale 1:15 840.

Intrusion Number	OTH-090		**Intrusion Name**	Ghost Range Complex				
Township/Area	Lamplugh, Frecheville		**Resident Geologist District**	Kirkland Lake				
Location Description								
Property Name	44 km east of Matheson						**Access**	Road
Geological Setting	Synvolcanic intrusion into metavolcanic rocks and metasediments of the Abitibi greenstone belt							
Intrusion Age/Era	2713 +7/-5 Ma[1]							
Geophysical Surveys								
Recent mapping	OGS Maps 2205[2], 2563[3]							
Morphology	Elongate lopolithic sill							
Size of Intrusion	11 km by 1.6 km, ~800 m in thickness							
Lithologies Present	Wehrlite, clinopyroxenite, gabbro							
Distribution of Lithologies	Ultramafic = Mafic							
Metamorphic grade	Greenschist							
Alteration	Moderate to pervasive silicification, sericitization and chloritization.							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence	Olivine, clinopyroxene, plagioclase							
Host rocks	Metavolcanic rocks and metasediments							
Nature of contact								
Material analyzed	Grab sample		**Sample Distribution**	10 samples				
Geochemical Characteristics: Please refer to figures 17, 18 and 19.								
Chemical affinity	High Fe-tholeiites. Ti, Zr and Y ratios indicated MORB-like source.							
Sulphide (S) saturation	Mostly S-undersaturated							
Pd/Pt ratios	**Range**	0.63-1.51	**Median**	1.16	**Average**	1.08	**Number of Samples**	5
Pt + Pd (ppb)	**Range**	5.6-169.7	**Median**	5.7	**Average**	33.2	**Number of Samples**	6
Ni/Cu ratios	**Range**	0.28-97.25	**Median**	1.96	**Average**	20.85	**Number of Samples**	9
Total Ni (ppm)	**Range**	28-1167	**Median**	110	**Average**	241	**Number of Samples**	9
Total Cu (ppm)	**Range**	4-320	**Median**	51	**Average**	81	**Number of Samples**	10
Total sulphur (wt %)	**Range**	0.01-0.16	**Median**	0.03	**Average**	0.04	**Number of Samples**	8
Anomalies	Up to 170 ppb Pt+Pd in gabbro. Elevated PGE values.							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Rifted arc							
Mineralization Type	Unknown							
Potential for exploration	3 (elevated PGE values in general)							

MISCELLANEOUS NOTES:

South of Lake Abitibi, several sill-like, differentiated intrusions of peridotite, clinopyroxenite and gabbro form a 48.3 km segment of a 128.8 km long belt of ultramafic-gabbroic rocks that extend north of Timmins to just east of the Ontario-Quebec border. These sill-like intrusions may be categorized into four main types: 1) complex sills of repeating layers, 2) differentiated sills with a single sequence of peridotite-clinopyroxene-gabbro, 3) wholly ultramafic sills, and 4) wholly gabbroic sills.

The Ghost Lake sill is approximately 11.3 km long and 1.6 km wide. This sill-like body is in the form of a doubly plunging syncline. The intrusion is characterized by a sequence of layers in the order of peridotite-clinopyroxenite-gabbro. In outcrop, the basal peridotite is reddish brown and has a stucco-like appearance due to the presence of oikiocrystic orthopyroxene. In thin section, the rounded cumulus olivine grains vary in size. This variation in size is considerable near the base of the layer and much less at the top. The orthopyroxene is replaced by serpentine and lesser amounts of chlorite. Postcumulus material consists of equal amounts of medium- to large-grained clinopyroxene oikiocrysts and fine-grained secondary chlorite after orthopyroxene and plagioclase. Clinopyroxenite occurs as a layer 1.5 to 6.1 m wide and is in sharp contact with the overlying gabbroic rocks. The lower contact with peridotite is intensely sheared over a width of 0.6 m. The gabbroic rocks resemble those of the gabbroic zone of the Munroe Lake sill except that interstitial granophyre is much more common, especially in the uppermost exposed rocks.

REFERENCES:

[1] Corfu, F. 1993. The evolution of the southern Abitibi greenstone belt in light of precise U-Pb geochronology; Economic Geology, v.88, p.1323-1340.

[2] Pyke, D.R., Ayres, L.D. and Innes, D.G. 1973. Timmins-Kirkland Lake, Geological Compilation Series, Cochrane, Sudbury and Timiskaming Districts; Ontario Geological Survey, Bedrock Geology Map 2205, scale 1:253 440.

[3] Berger, B.R., Luinstra, B. and Ropchan, J. C. 2000. Precambrian geology of the Ghost Range area; Ontario Geological Survey, Map 2563, scale 1:50 000.

OTHER REFERENCES:

Ambrose, J.W. 1944. Preliminary Map, Duparquet-Larder Lake-Rouyn Region, Ontario and Quebec; Geological Survey of Canada, Preliminary series Paper 44-29.

Goodwin, A.M., Ridler, R.H. and Annells, R.N. 1972. Precambrian Volcanism of the Noranda-Kirkland Lake-Timmins-Michipicoten and Mamainse Point Areas, Quebec and Ontario; 24th International Geological Congress Guidebook, Field Excursion A40-C40.

MacRae, N.D. 1969. Ultramafic Intrusions of the Abitibi Area, Ontario; Canadian Journal of Earth Sciences, v.6, p.281-304.

Satterly, J. 1943. Geology of the Dryden-Wabigoon Area, Kenora District, Ontario; Ontario Department of Mines, Annual Report 1941, v.50, pt.2.

Satterly, J. 1954. Geology of the North Half of Holloway Township, Cochrane District, Ontario; Ontario Department of Mines, Annual Report 1953, v.62, pt.7.

Intrusion Number	OTH-091		**Intrusion Name**	Nordica-Watabeag Lake				
Township/Area	Nordica		**Resident Geologist District**	Kirkland Lake				
Location Description	40 km WSW of Kirkland Lake							
Property Name						**Access**	Road	
Geological Setting	Syntectonic intrusion?							
Intrusion Age/Era	Older than Watabeag Batholith (2681±3 Ma)[1]							
Geophysical Surveys								
Recent mapping	OGS Map 2205[2]							
Morphology	Truncated by batholith							
Size of Intrusion	~4 km long							
Lithologies Present	Olivine gabbronorite, troctolite, chromitite, hornblendite							
Distribution of Lithologies	Ultramafic at base							
Metamorphic grade	Amphibolite							
Alteration	Pervasive chloritization, sericitization and replacement of ferromagnesian minerals by actinolite/tremolite							
Structure-Texture	Magmatic layering							
Magma Dynamics								
Characteristic Mineralogy	Presence of chromitite layers							
Crystallization Sequence								
Host rock	Mafic metavolcanic rocks							
Nature of contact								
Material analyzed	Grab sample		**Sample Distribution**	10 samples from SE corner (trenches)				
Geochemical Characteristics: Please refer to figures 17, 18 and 19.								
Chemical affinity	Tholeiitic.							
Sulphide (S) saturation	S-undersaturated							
Pd/Pt ratios	**Range**	0.63-1.51	**Median**	1.16	**Average**	1.08	**Number of Samples**	5
Pt + Pd (ppb)	**Range**	5.6-169.7	**Median**	5.7	**Average**	33.2	**Number of Samples**	6
Ni/Cu ratios	**Range**	0.28-97.25	**Median**	1.96	**Average**	20.85	**Number of Samples**	9
Total Ni (ppm)	**Range**	28-1167	**Median**	110	**Average**	241	**Number of Samples**	9
Total Cu (ppm)	**Range**	4-320	**Median**	51	**Average**	81	**Number of Samples**	10
Total sulphur (wt %)	**Range**	0.01-0.97	**Median**	0.07	**Average**	0.25	**Number of Samples**	10
Anomalies	Excellent PGE values							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Rifted arc							
Mineralization Type	Type II in most ultramafic units (olivine cumulate-and pyroxenite). Chromitite seam present but has low PGE grades.							
Potential for exploration	2 (what is left of this intrusion appears to be too small (cut by Watabeag Batholith) to be highly prospective. If similar intrusions exist in this region, they would have excellent potential for PGE mineralization)							

MISCELLANEOUS NOTES:

The Nordica intrusion is a mafic-ultramafic layered intrusion. The most abundant unit is troctolite, which is either coarse grained or pegmatitic. It is locally intruded by hornblendite. A cumulate olivine gabbronorite is present on the west side of the intrusion and is interpreted to represent the basal portion of the intrusion. A chromitite seam (1-3 m in thickness) is present in the basal gabbronorite unit.

REFERENCES:

[1] Frarey, M.J. and Krogh, T.E. 1986. U-Pb zircon ages of late internal plutons of the Abitibi and eastern Wawa subprovinces, Ontario and Quebec; Geological Survey of Canada, Paper 86-1A, p.43-48.

[2] Pyke, D.R., Ayres, L.D. and Innes, D.G. 1973. Timmins-Kirkland Lake, Geological Compilation Series, Cochrane, Sudbury and Timiskaming Districts; Ontario Geological Survey, Bedrock Geology Map 2205, scale 1:253 440.

OTHER REFERENCES:

Vaillancourt, C. 2001. Precambrian geology of the Watabeag Lake area; Ontario Geological Survey, Open File Report 6042, 61p.

Vaillancourt, C. 2001. Geological mapping west of Watabeag Lake, District of Cochrane; *in* Summary of Field Work and Other Activities 2000, Ontario Geological Survey, Open File Report 6000, p.7.1-7.9.

Intrusion Number	OTH-092	**Intrusion Name**	Tisdale Peridotite Sill					
Township/Area	Eby	**Resident Geologist District**	Kirkland Lake					
Location Description	12 km southwest of Kirkland Lake, northeast side of Highway 11[1]							
Property Name		**Access**	Road					
Geological Setting	Synvolcanic?							
Intrusion Age/Era	~2710-2703 Ma[1]							
Geophysical Surveys								
Recent mapping	OGS Map 2205[2]							
Morphology	Sill[3]							
Size of Intrusion	1 to 2 meters in thickness[3]							
Lithologies Present	Peridotite							
Distribution of Lithologies	Ultramafic							
Metamorphic grade	Greenschist							
Alteration								
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Mafic metavolcanic rocks							
Nature of contact								
Material analyzed	Grab sample	**Sample Distribution**	1 sample					
Geochemical Characteristics: Please refer to figures 17, 18 and 19.								
Chemical affinity	Unknown – insufficient data							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	1.86	**Median**	1.86	**Average**	1.86	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	14.2	**Median**	14.2	**Average**	14.2	**Number of Samples**	1
Ni/Cu ratios	**Range**	14.58	**Median**	14.58	**Average**	14.58	**Number of Samples**	1
Total Ni (ppm)	**Range**	977	**Median**	977	**Average**	977	**Number of Samples**	1
Total Cu (ppm)	**Range**	67	**Median**	67	**Average**	67	**Number of Samples**	1
Total sulphur (wt %)	**Range**	0.06	**Median**	0.06	**Average**	0.06	**Number of Samples**	1
Anomalies	None							
Hypothetical Source Region	-							
Tectonic Setting	Rifted arc							
Mineralization Type	Unknown							
Potential for exploration	1							

MISCELLANEOUS NOTES:

The Tisdale peridotite sill is located approximately 12 km southwest of Kirkland Lake, on the northeast side of Highway 11. The ultramafic sill is approximately 1-2 meters in thickness and is interpreted as a part of the Tisdale volcanic assemblage into which it intrudes[1].

REFERENCES:

[1] Ayer, J.A., Amelin, Y., Corfu, F., Ketchum, J., Kwok, K. and Trowell, N.F. 2002. Evolution of the southern Abitibi greenstone belt based on U-Pb geochronology: autochthonous volcanic construction followed by plutonism, regional deformation and sedimentation. Precambrian Research, v.115, p.63-95.
[2] Pyke, D.R., Ayres, L.D. and Innes, D.G. 1973. Timmins-Kirkland Lake, Geological Compilation Series, Cochrane, Sudbury and Timiskaming Districts; Ontario Geological Survey, Map 2205, scale 1:253 440.
[3] B. Berger, Ontario Geological Survey, personal communication, 2001.

Intrusion Number	OTH-093		**Intrusion Name**	Otto Stock				
Township/Area	Boston, Eby, Otto, Marquis		**Resident Geologist District**	Kirkland Lake				
Location Description	~5 km S of Kirkland Lake							
Property Name							**Access**	Road
Geological Setting	Post-tectonic intrusion							
Intrusion Age/Era	2680±1 Ma[1], 2679±1 Ma[2]							
Geophysical Surveys								
Recent mapping	OGS Maps 2239[3], 2361[4]							
Morphology	Circular							
Size of Intrusion	Approximately circular with 10 km diameter							
Lithologies Present	Hornblendite, quartz syenite, nepheline syenite, mafic syenite							
Stratigraphic Sequence	Intermediate >> Ultramafic							
Metamorphic grade	Greenschist							
Alteration	Weak sericitization and epidotization							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Mafic metavolcanic rocks and granites							
Nature of contact	Intrusive							
Material analyzed	Grab sample		**Sample Distribution**					
Geochemical Characteristics: Please refer to figures 17, 18 and 19.								
Chemical affinity	Alkalic							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	1.04-3.70	**Median**	1.37	**Average**	1.75	**Number of Samples**	8
Pt + Pd (ppb)	**Range**	1.6-17.2	**Median**	5.5	**Average**	7.4	**Number of Samples**	8
Ni/Cu ratios	**Range**	0.10-5.11	**Median**	0.89	**Average**	1.45	**Number of Samples**	9
Total Ni (ppm)	**Range**	6-219	**Median**	66	**Average**	85	**Number of Samples**	10
Total Cu (ppm)	**Range**	9-651	**Median**	77	**Average**	162	**Number of Samples**	9
Total sulphur (wt %)	**Range**	0.01-0.15	**Median**	0.06	**Average**	0.06	**Number of Samples**	10
Anomalies	None							
Hypothetical Source Region	Metasomatized mantle							
Tectonic Setting	Rifted arc							
Mineralization Type	Unknown							
Potential for exploration	1 (low PGE values and small size mafic phases/enclaves)							

MISCELLANEOUS NOTES:

The Otto Stock is ~11 km in diameter, and ranges from quartz syenite, to syenite to nepheline syenite with minor hornblendite to diorite. The intrusions are thought to have formed by melting large ion lithophile (LIL)-enriched mantle.

REFERENCES:

[1] Ayer, J.A. and Trowell, N.F. 2000. Geological compilation of the Kirkland Lake area, Abitibi greenstone belt; Ontario Geological Survey, Preliminary Map P.3425, scale 1:100 000.

[2] Corfu, F. and Nobel, S.R. 1992. Genesis of the southern Abitibi greenstone belt, Superior Province, Canada: Evidence from zircon Hf isotope analyses using a single filament technique; Geochimica et Cosmochimica Acta, v.56, p.2081-2097.

[3] Lovell, H.L. 1972. Geology of the Eby and Otto Area, District of Timiskaming; Ontario Geological Survey, Geological Report 99, 34p. (includes Map 2239, scale 1:31 680).

[4] Card, K.D. and Lumbers, S.B. 1977. Sudbury-Cobalt, Geological Compilation Series, Algoma, Manitoulin, Nipissing, Parry Sound, Sudbury and Timiskaming Districts, Ontario; Ontario Geological Survey, Map 2361, scale 1:253 440.

OTHER REFERENCES:

Sutcliffe, R.H., Smith, A.R., Doherty, W. and Barnett, R.L. 1990. Mantle derivation of Archean amphibole-bearing granitoid and associated mafic rocks: evidence for the southern Superior Province, Canada; Contributions to Mineralogy and Petrology, v.105, p.255-274.

Jackson, S.L. and Fyon, J.A. 1991. The Western Abitibi subprovince in Ontario; *in* Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 2, p.405-484.

Intrusion Number	OTH-094		**Intrusion Name**	James Lake Dike				
Township/Area	Best		**Resident Geologist District**	Kirkland Lake				
Location Description	~9 km N of Temagami							
Property Name							**Access**	Road
Geological Setting	Post-tectonic							
Intrusion Age/Era	Proterozoic?							
Geophysical Surveys								
Recent mapping	OGS Maps 2361[1], 2613[2]							
Morphology	Dike							
Size of Intrusion	>5 km by 30 m							
Lithologies Present	Gabbro							
Stratigraphic Sequence	Mafic							
Metamorphic grade	Greenschist							
Alteration	Moderate chloritization and sericitization							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Granite							
Nature of contact								
Material analyzed	Grab sample		**Sample Distribution**	4 samples				
Geochemical Characteristics: Please refer to figures 17, 18 and 19.								
Chemical affinity	Tholeiitic. Ti, Zr and Y ratios indicated MORB-like magma.							
Sulphide (S) saturation	S-undersaturated?							
Pd/Pt ratios	**Range**	1.17-2.58	**Median**	2.11	**Average**	1.99	**Number of Samples**	4
Pt + Pd (ppb)	**Range**	20.0-626.6	**Median**	94.2	**Average**	208.7	**Number of Samples**	4
Ni/Cu ratios	**Range**	0.22-1.39	**Median**	0.91	**Average**	0.86	**Number of Samples**	4
Total Ni (ppm)	**Range**	236-5597	**Median**	947	**Average**	1932	**Number of Samples**	4
Total Cu (ppm)	**Range**	172-4027	**Median**	2539	**Average**	2319	**Number of Samples**	4
Total sulphur (wt %)	**Range**	0.11-35.30	**Median**	0.71	**Average**	0.92	**Number of Samples**	4
Anomalies	Up to 627 ppb Pt+Pd. High background numbers.							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Rifted arc?							
Mineralization Type	Type I							
Potential for exploration	2 (high background numbers)							

MISCELLANEOUS NOTES:

The James Lake Dike is approximately 10 to 15 m in thickness and potentially greater than 5 km in strike length. A small massive sulphide body is present in a flexure in the dike. The massive sulphides grade into disseminated sulphides in the dike. Polymictic xenoliths are present in the dike adjacent to the sulphide zone.

REFERENCES:

[1] Card, K.D. and Lumbers, S.B. 1977. Sudbury-Cobalt, Geological Compilation series, Algoma, Manitoulin, Nipissing, Parry Sound, Sudbury and Timiskaming Districts, Ontario; Ontario Geological Survey, Map 2361, scale 1:253 440.
[2] Smyk, M.C., Born, P. and Owsiacki, L. 1996. Precambrian Geology, Banting and the western part of Best Township; Ontario Geological Survey, Map 2613, scale 1:20 000.

OTHER REFERENCES:

Ontario Geological Survey 1984. Best Township, Ontario; Cobalt Resident Geologist's Office, Geological Data Inventory Folios, GDIF 158, 37p.
Thomson, R. 1968. Geology adjacent to Highway 11 in Best Township and the southern part of Gillies Limit Township, District of Timiskaming and Nipissing; Ontario Geological Survey, Open File Report 5016, 77p.

Intrusion Number	OTH-095			**Intrusion Name**	James Lake Gabbro			
Township/Area	Best			**Resident Geologist District**	Kirkland Lake			
Location Description	~10 km N of Temagami							
Property Name							**Access**	Road
Geological Setting	Synvolcanic to syntectonic?							
Intrusion Age/Era	Proterozoic?							
Geophysical Surveys								
Recent mapping	OGS Maps 2361[1], 2613[2]							
Morphology	Subrounded							
Size of Intrusion	Less than 500 m in thickness							
Lithologies Present	Gabbro, anorthositic gabbro							
Stratigraphic Sequence	Ultramafic < Mafic							
Metamorphic grade	Greenschist							
Alteration	Pervasive chloritization and sericitization							
Structure-Texture								
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rocks	Mafic and felsic metavolcanic rocks							
Nature of contact								
Material analyzed	Grab sample			**Sample Distribution**	6 samples			
Geochemical Characteristics: Please refer to figures 17, 18 and 19.								
Chemical affinity	Tholeiitic. Zr and Y ratios indicate MORB-like magma.							
Sulphide (S) saturation	S-undersaturated and S-saturated							
Pd/Pt ratios	**Range**	0.53-1.34	**Median**	1.28	**Average**	1.09	**Number of Samples**	5
Pt + Pd (ppb)	**Range**	5.5-77.7	**Median**	34.7	**Average**	38.1	**Number of Samples**	5
Ni/Cu ratios	**Range**	0.45-15.00	**Median**	1.46	**Average**	3.72	**Number of Samples**	6
Total Ni (ppm)	**Range**	186-1017	**Median**	281	**Average**	439	**Number of Samples**	6
Total Cu (ppm)	**Range**	20-1274	**Median**	187	**Average**	372	**Number of Samples**	6
Total sulphur (wt %)	**Range**	0.01-1.32	**Median**	0.19	**Average**	0.37	**Number of Samples**	6
Anomalies	High background PGE numbers							
Hypothetical Source Region	Depleted mantle							
Tectonic Setting	Rifted arc							
Mineralization Type	Unknown							
Potential for exploration	2							

MISCELLANEOUS NOTES:

The James Lake gabbro is a small intrusion approximately 120 m in thickness and less than 1 km in strike length. It is composed of a lower pyroxenite zone (not always present) that is overlain by gabbro grading to anorthositic gabbro. The base of the intrusion is marked by pegmatoidal gabbro to hornblende gabbro with both disseminated and veined sulphides.

REFERENCES:

[1] Card, K.D. and Lumbers, S.B. 1977. Sudbury-Cobalt, Geological Compilation series, Algoma, Manitoulin, Nipissing, Parry Sound, Sudbury and Timiskaming Districts, Ontario; Ontario Geological Survey, Map 2361, scale 1:253 440.

[2] Smyk, M.C., Born, P. and Owsiacki, L. 1996. Precambrian Geology, Banting and the western part of Best Township; Ontario Geological Survey, Map 2613, scale 1:20 000.

OTHER REFERENCES:

Ontario Geological Survey 1984. Best Township, Ontario; Cobalt Resident Geologist's Office, Geological Data Inventory Folios, GDIF 158, 37p.

Thomson, R. 1968. Geology adjacent to Highway 11 in Best Township and the southern part of Gillies Limit Township, District of Timiskaming and Nipissing; Ontario Geological Survey, Open File Report 5016, 77p.

Intrusion Number	OTH-096	**Intrusion Name**	Copperfields-Milestone Lake
Township/Area	Briggs, Phyllis	**Resident Geologist District**	Kirkland Lake
Location Description	19.5 km SW of Temagami		
Property Name		**Access**	Boat, road
Geological Setting	Syntectonic to post-tectonic intrusion located in sediments and metasediments of the Cobalt Group		
Intrusion Age/Era	Proterozoic?		
Geophysical Surveys			
Recent mapping	OGS Map 2361[1]		
Morphology	Elongate		
Size of Intrusion			
Lithologies Present	Diorite, gabbro		
Distribution of Lithologies	Mafic - Intermediate		
Metamorphic grade	Greenschist		
Alteration	Moderate to pervasive chloritization, carbonatization and sericitization		
Structure-Texture			
Magma Dynamics			
Characteristic Mineralogy			
Crystallization Sequence			
Host rock	Metasediments of the Cobalt Group		
Nature of contact	Intrusive		
Material analyzed	Grab sample including drill core*	**Sample Distribution**	26 samples

Geochemical Characteristics: Please refer to figures 17, 18 and 19.

Chemical affinity	Tholeiitic							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	0.31-2.37	**Median**	1.40	**Average**	1.34	**Number of Samples**	12
Pt + Pd (ppb)	**Range**	0.7-727.2	**Median**	4.6	**Average**	63.1	**Number of Samples**	18
Ni/Cu ratios	**Range**	0.13-77.00	**Median**	0.33	**Average**	4.48	**Number of Samples**	23
Total Ni (ppm)	**Range**	3-3884	**Median**	172	**Average**	473	**Number of Samples**	24
Total Cu (ppm)	**Range**	2-25325	**Median**	320	**Average**	1900	**Number of Samples**	26
Total sulphur (wt %)	**Range**	0.01-26.60	**Median**	0.68	**Average**	3.11	**Number of Samples**	21

Anomalies	Up to 727 ppb Pt+Pd in basal quartz gabbro
Hypothetical Source Region	Unclear from major and trace element data
Tectonic Setting	Rifted arc
Mineralization Type	Type I and Type V
Potential for exploration	3

MISCELLANEOUS NOTES:

*Temex Resources Ltd

REFERENCES:

[1] Card, K.D. and Lumbers, S.B. 1977. Sudbury-Cobalt, Geological Compilation series, Algoma, Manitoulin, Nipissing, Parry Sound, Sudbury and Timiskaming Districts, Ontario; Ontario Geological Survey, Map 2361, scale 1:253 440.

OTHER REFERENCES:

Franklin, J.M. 1966. The Pyrite Zone of the Temagami Mine of the Copperfields Mining Company, Temagami; unpublished M.Sc. thesis, Carleton University.

Rose, E.R. 1966. The copper-nickel deposits of Temagami Island, Ontario; Economic Geology, v.61, p.27-43.

Intrusion Number	OTH-097		**Intrusion Name**	Caribou Lake intrusion				
Township/Area	McConkey Township		**Resident Geologist District**	Sudbury				
Location Description	10 km west northwest and 1.9 km west of the village of Port Loring, 40 km WSW of French River, 62 km north of Parry Sound on Georgian Bay. NTS 41 H/16							
Property Name							**Access**	Road, boat
Geological Setting	Grenville Province, Central Gneiss Belt.							
Intrusion Age/Era	Mesoproterozoic							
Geophysical Surveys	Aeromagnetic survey[1]							
Recent mapping	OGS Map 2441[2]							
Morphology	Irregular to drumstick-shaped in map view. Funnel-shaped lopolith[3].							
Size of Intrusion	Covers an area of 7 square miles (18.1 sq. km), east-west dimensions 5 ½ miles (8.8 km), 2 miles (3.2 km) wide at maximum tapering to 650 ft (200 m) to the east[4], major/minor axes = 9.2 km x 3.0 km.[3]							
Lithologies Present	This study: Olivine-gabbronorite, metagabbro, norite, gabbronorite, pegmatitic metagabbro, monzogranite, pegmatitic norite, olivine-norite, metagabbro. Literature: A basic intrusive with ultramafic rock at the eastern end. Olivine-bearing rocks include picrite and olivine-norite[4]. Pyroxenite only occurs on south shore of Caribou Lake. Mineralization: sulphides formed by replacement of norite (prospect pits located in the norite near the contact with granite-gneisses).							
Stratigraphic Sequence								
Metamorphic grade	Upper amphibolite facies, possibly higher.							
Alteration	This study: samples were weathered rather than altered. Secondary hornblende and biotite encloses spinel. Literature: Magnetite, pyrrhotite, pyrite, spinel and their intergrowths are locally enclosed in secondary amphibole or mica. Four-ply coronas where garnet forms a rim between feldspar and symplectite. Secondary minerals on medium- to coarse-grained pyroxenite (diopside and hypersthene) includes garnet, amphibole and accessory magnetite and quartz[4]. Serpentinization of the picrite.							
Structure-Texture	Banding/igneous layering, alternating dark and light bands or planes of foliation strongly developed with dips of 30-40 degrees on the N and W[4]. Two synclinal areas in the western part of the intrusive body defined by foliation/igneous layering, foliation in the surrounding gneiss, and concentrically-shaped topographic highs and lows (corresponding to preferential weathering of igneous layers)[4]. Predominantly coarse-grained cumulate textured with coronas of pyroxene on olivines. Pyroxenes are rimmed by either hornblende or garnet.			**Strike**	Igneous Layering: (CMV-040) 180°		**Dip**	22°
Magma Dynamics								
Characteristic Mineralogy	Pyrrhotite, titaniferous magnetite, pyrite, and chalcopyrite occur either in stringers or as disseminated material in the norite. Clinopyroxene is only sparsely distributed through mineralised zones but the other three minerals are abundant. Sulphides formed by replacement of the norite and locally enclose corroded pyroxene relicts. Hypersthene content of the norite decreases and augite increases westward across the complex. Nickel, copper and chromium content of the norite decreases westward across the complex.[4]							
Crystallization Sequence								
Host rock	Intruded into granites and granite-gneisses[4].							
Nature of contact	Intrusive							
Material analyzed	Grab samples			**Sample Distribution**	20 samples collected along south edge of intrusion, covering from west to east.			
Geochemical Characteristics: Please refer to figures 23, 24 and 25.								
Chemical affinity	Tholeiitic							
Sulphide (S) saturation	S-saturated							
Pd/Pt ratios	**Range**	0.62-1.80	**Median**	1.16	**Average**	1.19	**Number of Samples**	4
Pt + Pd (ppb)	**Range**	1.6-3.6	**Median**	2.2	**Average**	2.4	**Number of Samples**	4
Ni/Cu ratios	**Range**	0.18-9.14	**Median**	1.22	**Average**	1.85	**Number of Samples**	20
Total Ni (ppm)	**Range**	2-740	**Median**	68	**Average**	129	**Number of Samples**	20
Total Cu (ppm)	**Range**	4-331	**Median**	40	**Average**	70	**Number of Samples**	20
Total sulphur (wt %)	**Range**	0.02-1.53	**Median**	0.07	**Average**	0.24	**Number of Samples**	18
Anomalies	None in this study. Ni-Cu occurrences (see Miscellaneous Notes).							
Hypothetical Source Region	Depleted mantle[5]							
Tectonic Setting	Unknown							
Mineralization Type	Unknown							
Potential for exploration	2 (low PGE, S-saturated but reported PGE values)							

MISCELLANEOUS NOTES:

Highest values assayed: 1.55% Cu, 1.2% Ni, and 8 grams Pt (quote[5])
From Friedman (1957):
Grab sample: Ni 0.22%, Cu 0.32%
Grab sample: Ni 0.37%, Cu & Pt not detected
Grab sample: Ni 0.32%, Cu 1.33%, trace Pt
Drill core: Ni 0.151%, Cu 0.226%, 125-175 ft depth Caribou Lake (1950-51 – Fred Chubbs & Associates)

In outcrop, the picrite is dark brownish-green, brown weathered and usually coarse-grained with poikilitic pyroxene enclosing olivine crystals. Primary mineral constituents include olivine, clinopyroxene and plagioclase. The olivine is rimmed by hypersthene followed in order by a thin veneer of spinel, and a clinopyroxene-spinel symplectite borders the plagioclase. Post-corona minerals include serpentine, biotite, magnetite and pyrite. Antigorite and serpentine typically replace olivine and the inner and outer corona minerals. Golden brown spinel, possibly the chrome-spinel (picotite), are commonly enclosed in olivine and serpentine. The olivine-norite has higher feldspar content than the picrite. Three-tier corona texture composed of the same minerals as in the picrite are also present in the olivine norite. However, a secondary hornblende and biotite enclose green intergranular spinel in the olivine norite. The only exposure of pyroxenite occurs on the south shore of Caribou Lake adjacent to the bay opposite Caribou Island. This rock is medium- to coarse-grained and is composed predominantly of diopside and lesser amounts of hypersthene. Secondary minerals consist of garnet, amphibole and accessory magnetite and quartz. Typically, the norite is a light grey, brown weathered and medium- to coarse-grained rock composed of labradorite, hypersthene, and augite. Accessory phases include magnetite and apatite. Norite pegmatites and aplites intrude earlier norite. Other secondary minerals in the norite include hornblende, garnet, clinozoisite, scapolite, quartz, apatite, sphene, spinel, pyrite, pyrrhotite, titaniferous magnetite, chalcopyrite, and carbonate.[4]

REFERENCES:

[1] Aeromagnetic Surveys Limited 1954. Airborne magnetic and electromagnetic survey of the Caribou Lake intrusive body and surrounding area Newkirk Mining Company.

[2] Freeman, E.B. 1979. Geological highway map, southern Ontario; Ontario Geological Survey, Map 2441, scale 1:800 000.

[3] Wilson, G.C. 1994. Mafic-ultramafic intrusions, base-metal sulphides, and platinum group element potential of the Grenville Province in southeastern Ontario; Ontario Geological Survey, Open File Report 5888, 196p.

[4] Friedman, G.M. 1957. Structure and Petrology of the Caribou Lake intrusive body, Ontario, Canada; Geological Society of America Bulletin, v.68, p.1531-1564.

[5] Coleman, A.P. 1900. Copper and iron regions of Ontario; Ontario Bureau of Mines, Report 9, part 1, p.143-191.

OTHER REFERENCES:

Easton, R.M. 1992. The Grenville Province and the Proterozoic history of central and southern Ontario; *in* Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 2, p.714-904.

Intrusion Number	OTH-008			**Intrusion Name**	Papineau Intrusion		
Township Area	Papineau Township			**Resident Geologist District**	Sudbury		
Location Description	48 km East Southeast of North Bay, West Northwest of Mattawa (highway 17); NTS 31 L 2						
Property Name						**Access**	Road
Geological Setting	Grenville Province, Central Gneiss Belt						
Intrusion Age/Era	Mesoproterozoic						
Geophysical Surveys							
Recent mapping	OGS Map P.1196[1]						
Morphology	Lenticular lobes.			**Strike**		**Dip**	
Size of Intrusion	Largest portion of intrusion is 6 miles by 1.5 miles and cigar shaped.						
Lithologies Present	This study: gabbro or metagabbro. *Zoning of high concentrations of garnet.*						
Stratigraphic Sequence							
Metamorphic grade	Upper amphibolite to granulite?						
Alteration							
Structure-Texture				**Strike**		**Dip**	
Magma Dynamics							
Characteristic Mineralogy							
Crystallization Sequence							
Host rock	Intrusion is hosted in gneissic tonalite, quartz syenite.						
Nature of contact					**Strike**	**Dip**	
Material analysed	Grab sample			**Sample Distribution**	One sample taken at the eastern tip of cigar-shaped lobe that trended NW to SE.		
Geochemical Characteristics: Please refer to figures 23, 24 and 25.							
Chemical affinity	Insufficient data						
Sulphide saturation	Insufficient data						
Pd/Pt ratios	**Range** -		**Median** -	**Average** -		**Number of Samples**	0
Pt + Pd	**Range** 0.8		**Median** 0.8	**Average** 0.8		**Number of Samples**	1
Ni/Cu ratios	**Range** 0.29		**Median** 0.29	**Average** 0.29		**Number of Samples**	1
Total Ni (ppm)	**Range** 5		**Median** 5	**Average** 5		**Number of Samples**	1
Total Cu (ppm)	**Range** 17		**Median** 17	**Average** 17		**Number of Samples**	1
Total sulphur (wt %)	**Range** 0.33		**Median** 0.33	**Average** 0.33		**Number of Samples**	1
Anomalies	None						
Hypothetical Source Region	Insufficient data						
Tectonic Setting	Unknown						
Mineralization Type	Unknown						
Potential for exploration							

MISCELLANEOUS NOTES:

The Papineau intrusion is located approximately 45–48 km east-southeast of North Bay. The intrusion is mapped as 3-4 northwest-southeast trending lenticular lobes interpreted as anticlinal structures that have folded the body. The largest part of the intrusion is approximately 6 miles by 1.5 miles. Lithologies present include gneissic to rarely massive anorthosite, anorthositic gabbro and minor gabbroic anorthosite.

REFERENCES:

[1] Lumbers, S.B. 1976. Geological series, Mattawa-Deep River area (western half), District of Nipissing; Ontario Geological Survey, Preliminary Map P.1196, scale 1:63 360.

Intrusion Number	[illegible]					**Intrusion Name**	McClintock Intrusion
Township/Area	McClintock and Livingstone Townships					**Resident Geologist District**	Southeastern Ontario
Location Description	30 km East of Huntsville; 5 to 10 km South of Dorset; NTS 31 E/7						
Property Name	Swain property and adjacent					**Access**	Road, trail
Geological Setting	Grenville Province, Central Gneiss Belt						
Intrusion Age/Era	Mesoproterozoic						
Geophysical Surveys	W.C. Ellerington (as quoted in 1997[1]) 1996: VLF-EM, DD, I.c, Pb						
Recent mapping	OGS Map in prep.[2]						
Morphology	U-shaped body oriented NE-SW						
Size of Intrusion	The intrusion is ~20 km long with a maximum width of 2.5 km on each limb of U.						
Lithologies Present	Noritic and gabbroic rocks, locally containing Ni-Cu mineralization						
Stratigraphic Sequence							
Metamorphic grade							
Alteration							
Structures-Textures				**Strike**		**Dip**	
Magma Dynamics							
Characteristic Mineralogy							
Crystallization Sequence							
Host rock	Migmatitic rocks and gneisses						
Nature of contact	Intrusive			**Strike**		**Dip**	
Material analysed	Grab samples*	**Sample Distribution**	Four samples from south portion and eastern limb of U-shape				
Geochemical Characteristics: Please refer to figures 23, 24 and 25.							
Chemical affinity	Tholeiitic						
Sulphide saturation	Saturated						
Pd/Pt ratios	**Range** 20.76	**Median**	20.76	**Average**	20.76	**Number of Samples**	1
Pt + Pd (ppb)	**Range** 1.2-12	**Median**	6.6	**Average**	6.6	**Number of Samples**	2
Ni/Cu ratios	**Range** 0.42-3.25	**Median**	1.42	**Average**	1.63	**Number of Samples**	4
Total Ni (ppm)	**Range** 49-7000	**Median**	311	**Average**	1913	**Number of Samples**	4
Total Cu (ppm)	**Range** 48-4164	**Median**	492.5	**Average**	1296	**Number of Samples**	4
Total sulphur (wt %)	**Range** 0.14-14.00	**Median**	0.42	**Average**	3.79	**Number of Samples**	4
Anomalies	Ni-Cu anomaly in sulphide-rich sample but PGE are low						
Hypothetical Source Region	Depleted mantle						
Tectonic Setting	Unknown						
Mineralization Type	Unknown						
Potential for exploration	Low (low PGE values, S-saturated)						

MISCELLANEOUS NOTES:

**Samples courtesy of R.M. Easton, OGS, Sudbury*

REFERENCES:

[1]Sangster, P.J., Papertzian, V.C., Steele, K.G., Laidlaw, D.A., Stewart, J.M. and Carter, T.R. 1998. Report of Activities 1997, Resident Geologist Program, Southern Ontario Regional Resident Geologist's Report: Southeastern and Southwestern districts, Mines and Minerals Information Centre, and Petroleum Resources Centre; Ontario Geological Survey, Open File Report 5974, 39p.
[2]Lumbers, S.B. and Vertolli, V.M. in prep. Precambrian geology, Kawagama area; Ontario Geological Survey, Preliminary Map, scale 1:50 000.

Intrusion Number	OTH-100		**Intrusion Name**	Little Papineau Lake Plutonic Complex				
Township/Area	Wicklow Township		**Resident Geologist District**	Southeastern Ontario				
Location Description	18 km North of Bancroft. NTS 31 F/5							
Property Name							**Access**	Road
Geological Setting	Grenville Province, Central Gneiss Belt.							
Intrusion Age/Era	Mesoproterozoic, likely 1350-1450 Ma							
Geophysical Surveys								
Recent mapping	OGS Map 2550[1]							
Morphology			**Strike**				**Dip**	
Size of Intrusion								
Lithologies Present	This study: tonalite. Biotite and hornblende are not distributed evenly. There are biotite-rich areas and hornblende-rich ones.							
Stratigraphic Sequence								
Metamorphic grade								
Alteration								
Structure-Texture	This study: medium- to coarse-grained, granoblastic		**Strike**				**Dip**	
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock								
Nature of contact					**Strike**		**Dip**	
Material analyzed	Grab sample			**Sample Distribution**				
Geochemical Characteristics: Please refer to figures 23, 24 and 25.								
Chemical affinity	Insufficient data							
Sulphide saturation	Insufficient data							
Pd/Pt ratios	**Range**	7.83	**Median**	7.83	**Average**	7.83	**Number of Samples**	1
Pt + Pd (ppb)	**Range**	5.8	**Median**	5.8	**Average**	5.8	**Number of Samples**	1
Ni/Cu ratios	**Range**	0.15-0.48	**Median**	0.31	**Average**	0.31	**Number of Samples**	2
Total Ni (ppm)	**Range**	9-32	**Median**	21	**Average**	21	**Number of Samples**	2
Total Cu (ppm)	**Range**	62-67	**Median**	64.5	**Average**	64.5	**Number of Samples**	2
Total sulphur (wt %)	**Range**	0.23	**Median**	0.23	**Average**	0.23	**Number of Samples**	1
Anomalies	None							
Hypothetical Source Region	Insufficient data							
Tectonic Setting	If older than 1350 Ma, possible continental arc							
Mineralization Type	Unknown							
Potential for exploration								

REFERENCES:

[1] Breaks, F.W. and Thivierge, R.H. 2001. Precambrian Geology, Wicklow area; Ontario Geological Survey, Report 288, 107p. Accompanied by Map 2550, scale 1:20 000.

Intrusion Number	OTH-101		**Intrusion Name**	Raglan Hills Metagabbro				
Township/Area	Raglan Township		**Resident Geologist District**	Southeastern Ontario				
Location Description	35 km NE of Bancroft on Highway 62. NTS 31 F/3							
Property Name	Mr. Fred Inwood (Landolac Mining Company 1956), Ameranium Mines Ltd[1], Genricks Lake.						**Access**	Road
Geological Setting	Grenville Province, Central Metasedimentary Belt, Elzevir terrane.							
Intrusion Age/Era	Mesoproterozoic, zircons give average Pb^{206}/Pb^{207} age of 1229±5 Ma[2].							
Geophysical Surveys								
Recent mapping	OGS Maps 2461[3], 1953-2[4]							
Morphology	Lens-shaped body.			**Strike**			**Dip**	
Size of Intrusion	Area of 50.3 sq. km with major minor axes=18.5 x 5.6 km[3].							
Lithologies Present	This study: metagabbro, pegmatitic gabbro, olivine-pyroxenite, hornblendite, amphibolite, pegmatitic metagabbro. Literature: Quartz-diorite, diorite, gabbro, olivine-gabbro, pyroxenite and olivine-pyroxenite form a series of mafic intrusive rocks in the map area. These intrusive rocks are strongly gneissic and highly metamorphosed to metagabbro, hornblendite, hornblende schist and amphibolite. Sheared metagabbro (50% of map area), foliated amphibolite (44%), uralitized melagabbro (5%) and uralitized pyroxenite (<1%)[3].							
Stratigraphic Sequence								
Metamorphic grade	Middle to upper amphibolite facies.							
Alteration	This study: gabbro? weakly sericitized and serpentinized.							
Structure-Texture	This study: Well foliated and mostly granoblastic textures from metamorphism. Literature: A gently southeast-dipping, dip-lineated tectonic foliation, which varies from a moderate planar fabric to narrow, anastomosing mylonitic shears, is penetratively developed in the more lithologically homogeneous portions of the plutons. Most of the gabbros also carry planar fabric resulting from magmatic crystallization.[2]							
Magma Dynamics								
Characteristic Mineralogy	Rocks are very altered and recrystallised. Scapolite replaces variable amounts of plagioclase all through the sampled area. Presence of an unidentified acicular and colorless mineral: best guess is colorless tourmaline.							
Crystallization Sequence								
Host rock	Clastic metasediments and minor marble and calc-silicates.							
Nature of contact	Intrusive			**Strike**			**Dip**	
Material analyzed	Grab samples	**Sample Distribution**	19 samples from midsection dissecting the intrusion NE to SW.					
Geochemical Characteristics: Please refer to figures 23, 24 and 25.								
Chemical affinity	Tholeiitic							
Sulphide saturation	Mostly saturated							
Pd/Pt ratios	**Range**	0.40-1.54	**Median**	0.68	**Average**	0.83	**Number of Samples**	4
Pt + Pd (ppb)	**Range**	0.6-9.5	**Median**	5.4	**Average**	4.7	**Number of Samples**	7
Ni/Cu ratios	**Range**	0.25-29.11	**Median**	2.39	**Average**	4.28	**Number of Samples**	17
Total Ni (ppm)	**Range**	10-595	**Median**	87	**Average**	146	**Number of Samples**	19
Total Cu (ppm)	**Range**	80-200	**Median**	31	**Average**	48	**Number of Samples**	17
Total sulphur (wt %)	**Range**	0.01-0.55	**Median**	0.02	**Average**	0.06	**Number of Samples**	19
Anomalies	Reported values up to 221 ppb Pd+Pt in sulphide-rich gabbros.[1] Sulphide showings occur within variable leucogabbro to melagabbro to pyroxenite host rocks. Pyrrhotite is the most abundant sulphide and chalcopyrite is erratic. Minor pentlandite is present as flames in pyrrhotite, often near chalcopyrite and rarely as larger grains along pyrrhotite grain boundaries[5].							
Hypothetical Source Region	Upper mantle							
Tectonic Setting	Marginal basin?[2]							
Mineralization Type	Unknown							
Potential for exploration	2-3 (Tholeiitic, locally S-undersaturated, locally high PGE values)							

MISCELLANEOUS NOTES:

The Brudenell-Raglan map area comprises Brudenell, Lyndoch, Radcliffe and Raglan Townships, which lie in the southwest corner of Renfrew county in eastern Ontario. The villages of Combermere, Palmer Rapids, Quadeville, Brudenell and Schutt lie within the map area. Quartz-diorite, diorite, gabbro, olivine-gabbro, pyroxenite and olivine pyroxenite form a series of mafic intrusive rocks in the map area. These intrusive rocks are strongly gneissic and highly metamorphosed to metagabbro, hornblendite, hornblende schist and amphibolite. The Raglan Hills metagabbro complex is the largest mafic intrusive body in the map area. This lens-shaped body is 14 km long and has a maximum width of 5 km. This intrusion dips near vertically and extends from the southwest corner of Raglan Township toward the village of Schutt in the northeast. This complex is composed predominantly of metagabbro and lesser amounts of hornblende-schists and pyroxenite. The metagabbro and hornblende-schists have a prominent, northeasterly-striking foliation that ranges in dip from 40 to 80 degrees to the southeast. The metagabbro is a coarse-grained, foliated hornblende-plagioclase gneiss. In thin section, the metagabbro consists mainly of plagioclase (oligoclase to labradorite) and variable amounts of dark-green hornblende. Scapolite may be present and locally may completely constitute the light-coloured portions of the metagabbro. Relic pyroxene with hornblende rims is common and titanite, apatite, carbonate, biotite, zircon, quartz, olivine, and hypersthene are rare. The second most abundant rock type of the Raglan Hills complex is a fine-grained, well-banded hornblende-schist or amphibolite and is commonly found along the margin and near the east and west extremities of the complex where it appears to be a border facies of the body. Adjacent sedimentary rocks are contact metamorphosed by intrusion of these mafic rocks, subsequently forming amphibolite and hornblende schist. Sometimes these rocks are indistinguishable from the amphibolites of meta-intrusive origin. Pyroxenite and olivine-pyroxenite are mainly found in the central part of the Raglan Hills east of Trolly Lake. Metamorphosed equivalents first show mortar structure and mylonitization and then the development of secondary amphiboles. The final stage of metamorphism may be represented by coarse-grained, massive hornblendites.[3-4]

Note: The following text is from Easton (1992)[6].
The Simmons deposit[7] is the largest gabbroic-hosted copper-nickel deposit within the Bancroft terrane and is hosted in the Raglan Hills gabbro. It is associated with a roof pendant of possible metavolcanic rocks. Magnetite-bearing amphibolites within the gabbro locally host gold mineralization, and comparisons have been made with the New Calumet deposit near the Ontario-Quebec boundary. Other gabbroic hosted copper-nickel deposits in the Bancroft Terrane include the Ameranium, Genricks Lake, Landolac and Raglan deposits within the Raglan Hills gabbro. Mineralization in all consists of pyrrhotite, chalcopyrite, pentlandite and pyrite[7].

Four concentrations of Cu-Ni mineralization occur within the deformed and metamorphosed Raglan Hills gabbro in the Bancroft terrane. This is an amphibolite facies, strongly deformed gabbro-anorthosite intrusion, which consists of medium- to coarse-grained, massive to gneissic metagabbro containing accessory titanite, apatite, carbonate, zircon and quartz[4-7]. Hornblendite is common around the margins of the intrusion. Pyroxenite and olivine-pyroxenite occur in the central part of the intrusion and anorthositic gabbro is also present[7]. At the Raglan prospect, sulphide mineralization consists of a broad lens of disseminated pyrrhotite, chalcopyrite and pyrite which is 155 m long, 90 m wide and 6 to 15 m thick containing approximately 1% combined copper and nickel[7].

REFERENCES:

[1] Carter, T.R., Colvine, A.C. and Meyn, H.D. 1980. Geology of base metal, precious metal, iron and molybdenum deposits in the Pembroke-Renfrew area; Ontario Geological Survey, Mineral Deposits Circular 20, 186p.

[2] Pehrsson, S., Hanmer, S. and van Breemen, O. 1996. U-Pb geochronology of the Raglan gabbro belt, Central Metasedimentary Belt, Ontario: implications for an ensialic marginal basin in the Grenville Orogen; Canadian Journal of Earth Sciences, v.33, no.5, p.691-702.

[3] Lumbers, S.B. 1982. Barry's Bay, Precambrian geology; Ontario Geological Survey, Map 2461, scale 1:100 000.

[4] Hewitt, D.F. 1954. Geology of the Brudenell-Raglan area, County of Renfrew; Ontario Department of Mines, Annual Report 1953, v.62, pt.5, 101p. Accompanied by Map 1953-02, scale 1:63 360.

[5] Wilson, G.C. 1994. Mafic-ultramafic intrusions, base-metal sulphides, and platinum group element potential of the Grenville Province in southeastern Ontario; Ontario Geological Survey, Open File Report 5880, 196p.

[6] Easton, R.M. 1992. The Grenville Province and the Proterozoic history of central and southern Ontario; *in* Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 2, p.714-904.

[7] Carter, T.R. 1984. Metallogeny of the Grenville Province, southeastern Ontario; Ontario Geological Survey, Open File Report 5515, 422p.

OTHER REFERENCES:

Appleyard, E.C. 1969. Nepheline gneiss of the Wolfe Belt, Lyndoch Township, Ontario, part 2, textures and mineral paragenesis; Canadian Journal of Earth Sciences, v.6, p.689-717.

Hewitt, D.F. 1982. Summary of Metallogeny, Renfrew County area; Ontario Geological Survey, Report 212, 58p.

Hewitt, D.F. 1969. Geology and scenery, Peterborough, Bancroft and Madoc area; Ontario Geological Survey, Guidebook No.3, 114p.

Hewitt, D.F. and Satterly, J. 1972. Haliburton-Bancroft area, Province of Ontario; Ontario Department of Mines, Map 1957B, scale 1:126 720.

Macdonald, A.J. and Cherry, M.E. 1988. The platinum group of elements in Ontario; Ontario Geological Survey, Open File Report 5681, 279p.

Intrusion Number	OTH-102	**Intrusion Name**	Tudor Gabbro					
Township/Area	Tudor Township	**Resident Geologist District**	Southeastern Ontario					
Location Description	4.2 km NW of Millbridge, 30 km N of Madoc[1]. NTS 31 C/12							
Property Name	Orton Property and Ricketts Property.	**Access**	Road					
Geological Setting	Grenville Province, Central Metasedimentary Belt, Elzevir Terrane. The Tudor gabbro is the largest of three significant mafic intrusions in the Lake Township map area. It makes up one of the diorite-gabbro intrusions of the Belmont Domain that consist of a variety of phases including diorite, gabbro, pyroxenite and anorthositic gabbro.[1]							
Intrusion Age/Era	Mesoproterozoic, part of the Lavant gabbro suite, which is 1250-1240 Ma[2].							
Geophysical Surveys								
Recent mapping	OGS Maps P.146[3], P.147[4], P.3402[5], 2168[6], 2106[7], 1957b[8]							
Morphology	Elliptical body with a northeastern elongation[6] (in plan).							
Size of Intrusion	Area of 28.5 sq. km with major/minor axes = 9.3 x 4.1 km.[1]							
Lithologies Present	This study: pegmatitic gabbro, metagabbro, gabbronorite, olivine-gabbronorite, magnetite layer, altered gabbro, tonalite, clinopyroxenite. Literature: intrusion is composed of uralitized gabbro and uralitized diorite with purplish plagioclase (contains inclusions of fine-grained hematite and hemo-ilmenite)[6]. Gabbro and diorite have variable grain size but commonly outcrop as coarse-grained units with abundant biotite and traces of pyrite and rare chalcopyrite. Local presence of monzonite and leucogabbro[1].							
Stratigraphic Sequence								
Metamorphic grade	Greenschist to lower amphibolite facies.							
Alteration	This study: weak to intermediate pervasive epidote with some sericitization, carbonatization and chloritization. Literature: Although gabbro and diorite locally contain relic pyroxene, complete uralitization and saussuritization of these rocks are common, particularly near their junction with the carbonate sediments. Most commonly, uralitization and saussuritization are concentrated along joints, but where evidence of movement such as slickensides is present along joints or in the vicinity of faults and shear zones, uralitization and saussuritization are distributed irregularly over relatively large areas of the intrusive rocks[6].							
Structure-Texture	This study: Predominantly cumulate-textured gabbroic rock, granoblastic and granular. Local weak foliation but generally undeformed.							
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Intrudes carbonate metasediments and mafic metavolcanic rocks.							
Nature of contact	Intrusive	**Strike**		**Dip**				
Material analyzed	Grab samples	**Sample Distribution**	32 samples taken across intrusion lengthwise (W-E), and widthwise from the south to the W-E transect, and a grouping on the eastern-most tip.					
Geochemical Characteristics: Please refer to figures 23, 24 and 25.								
Chemical affinity	Tholeiitic							
Sulphide saturation	No data							
Pd/Pt ratios	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Pt + Pd (ppb)	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Ni/Cu ratios	**Range**	0.29-12.50	**Median**	2.39	**Average**	4.28	**Number of Samples**	31
Total Ni (ppm)	**Range**	7-258	**Median**	63	**Average**	71	**Number of Samples**	31
Total Cu (ppm)	**Range**	4-86	**Median**	40.5	**Average**	41	**Number of Samples**	32
Total sulphur (wt %)	**Range**	0.01-0.48	**Median**	0.14	**Average**	0.17	**Number of Samples**	31
Anomalies	Fe-Ti oxide mineralization[6] – Orton mine. No sulphide showings known, but there are traces of magnetite, ilmenite, pyrite, chalcopyrite and pyrrhotite found in the intrusion[1].							
Hypothetical Source Region								
Tectonic Setting	Marginal basin, may be a stitching pluton after arc fragment assembly							
Mineralization Type	Unknown							
Potential for exploration	1-2 (very low PGE values)							

MISCELLANEOUS NOTES:

The Tudor gabbro, Lake metagabbro and Whetstone Lake gabbro and metagabbro are the three major mafic intrusive bodies in the Lake Township map area, which is situated approximately 16 km north of the Village of Marmora. The Tudor gabbro extends from west-central Lake Township into east-central Tudor Township and is believed to form part of a biotite diorite series, which is present in the Bancroft-Madoc region. Host rocks to the Tudor gabbro include folded carbonate metasedimentary rocks and volcanic rocks. The volcanic rocks contain zircon-bearing rhyolite which yield a U-Pb date of 1286 ± 15 Ma, thus providing an upper limit for the emplacement of the Tudor gabbro. The Tudor gabbro is crudely elliptical in plan with a northeastern elongation and has an area of approximately 12 square miles. This intrusion is composed mainly of uralitized gabbro and uralitized diorite in which the plagioclase commonly has a purplish tint due to abundant inclusions of fine-grained hematite and hemo-ilmenite. Anorthositic gabbro and diorite are also common within the intrusion and an elongate mass of altered anorthosite composed mainly of saussuritized plagioclase is present just west of the Hastings Road. Coarse-grained gabbro and diorite with nests of pegmatitic gabbro and diorite are common, especially near the contacts with the carbonate metasediments. Fine-grained border phases of the diorite and gabbro are common locally at the metavolcanic contacts and are rare at the carbonate metasediments contact. The diorite is concentrated near the borders of the intrusion and almost completely encloses the gabbro. Both rock types are gradational at their contacts. Anorthositic phases of these rocks grade irregularly into the more mafic gabbro and diorite. Locally, the gabbro and diorite are intermingled and show primary, discontinuous, compositional layering marked by alternating rhythmic alterations of felsic-rich and mafic-rich layers less than 0.3 m thick. Partly altered pyroxenite and peridotite form a zone about 720 m long and 210 m wide at the southern margin of the intrusion. These altered ultramafic rocks grade into uralitized gabbro and metagabbro. A few metapyroxenite dikes associated with massive ilmenomagnetite stringers occur locally in the gabbroic and dioritic rocks and also at the Orton mine, south of Mann Lake. The youngest phases of the Tudor gabbro are fine-grained diorite dikes, which are widespread throughout the intrusion, and trondhjemite, minor granodiorite, and rare granite-pegmatites, which occur near the northeastern margin of the intrusion. A narrow alteration zone composed of coarse-grained marble with lime silicate rims the intrusion. A zone of much greater alteration is present in the marble country rocks on the northwest side of the intrusion along Beaver Creek. This alteration zone contains a large amount of tremolite, actinolite, and impure talc in the coarse-grained marble. The Tudor gabbro is much less altered than the Lake metagabbro intrusion.[3-4]

REFERENCES:

[1] Wilson, G.C. 1994. Mafic-ultramafic intrusion, base-metal sulphides, and platinum group element potential of the Grenville province in southeastern Ontario; Ontario Geological Survey, Open File Report 5880, 196p.
[2] Easton, R.M. 1992. The Grenville province and the Proterozoic history of central and southern Ontario; *in* Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 2, p.714-904.
[3] Lumbers, S.B. 1962. Tudor Township (north half), County of Hastings; Ontario Department of Mines, Preliminary Map P.146, scale 1:15 840.
[4] Lumbers, S.B. 1962. Tudor Township (south half), County of Hastings; Ontario Department of Mines, Preliminary Map P.147, scale 1:15 840.
[5] Lumbers, S.B. and Vertolli, V.M. 2000. Precambrian geology, Bannockburn area; Ontario Geological Survey, Preliminary Map P.3402, scale 1:50 000.
[6] Lumbers, S.B. 1969. Geology of Limerick and Tudor Townships, Hastings County; Ontario Department of Mines, Geological Report 67, 110p. Accompanied by Maps 2167 and 2168, scale 1:31 660.
[7] Laakso, R.K. 1968. Geology of Lake Township, Hastings County; Ontario Department of Mines, Geological Report 54, 36p. Accompanied by Map 2106, scale 1:31 660.
[8] Satterly, J. and Hewitt, D.F. 1972. Haliburton-Bancroft area, Province of Ontario; Ontario Geological Survey, Map 1957B, scale 1:126 720.

OTHER REFERENCES:

Chayes, F. 1942. Alkaline and carbonatite intrusives near Bancroft, Ontario; Geological Society of America Bulletin, v.53, p.449-511.
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Palmer, H.C. and Carmichael, C.M. 1972. Grenville paleomagnetism and possible tectonic implications; Eos, Transaction, American Geophysical Union, v.53, p.357.
Rose, E.R. 1958. Iron deposits of eastern Ontario and Quebec; Geological Survey of Canada, Bulletin 45, p.120.
Smith, T.E. and Holm, P.E. 1990. The petrogenesis of mafic minor intrusions and volcanics of the Central Metasedimentary Belt, Grenville Province, Canada: MORB and OIB sources; Precambrian Research, v.48, p.361-373.

Intrusion Number	OTH-103			**Intrusion Name**	Lingham Lake intrusion			
Township/Area	Grimsthorpe and Tudor Townships			**Resident Geologist District**	Southeastern Ontario			
Location Description								
Property Name					**Access**	Road		
Geological Setting	Grenville Province, Central Metasedimentary Belt, Elzevir Terrane.							
Intrusion Age/Era	Mesoproterozoic (1280-1250 Ma)							
Geophysical Surveys								
Recent mapping	OGS Map P.3267[1], P.3439[2]							
Morphology	Oval-shaped			**Strike**		**Dip**		
Size of Intrusion	Roughly 9 to 12 km in diameter.							
Lithologies Present	This study: metagabbro, lherzolite, olivine-pyroxenite, pyroxenite, clinopyroxenite, metagabbro, leucogabbro, gabbro.							
Stratigraphic Sequence								
Metamorphic grade	Amphibolite with hornblende-chlorite paragenesis, possibly local greenschist with actinolite-chlorite-epidote.							
Alteration	This study: chloritization, carbonatization, sericitization with some degree of talc and tremolite/actinolite.							
Structure-Texture	Mostly undeformed to weakly foliated, but locally schistose to gneissic; granoblastic and granular texture.			**Strike**		**Dip**		
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	The intrusion is hosted in metavolcanic rocks and minor clastic metasedimentary rocks.							
Nature of contact					**Strike**		**Dip**	
Material analyzed	Grab sample		**Sample Distribution**	22 samples taken from south and southwestern portion of ovoid/oval body.				
Geochemical Characteristics: Please refer to figures 23, 24 and 25.								
Chemical affinity	Possibly calc-alkaline							
Sulphide saturation	Mostly saturated							
Pd/Pt ratios	**Range**	0.71-1.58	**Median**	0.86	**Average**	1.05	**Number of Samples**	3
Pt + Pd (ppb)	**Range**	0.5-7.6	**Median**	1.0	**Average**	2.3	**Number of Samples**	9
Ni/Cu ratios	**Range**	0.11-75.13	**Median**	3.05	**Average**	9.19	**Number of Samples**	21
Total Ni (ppm)	**Range**	14-601	**Median**	49	**Average**	155	**Number of Samples**	21
Total Cu (ppm)	**Range**	3-299	**Median**	35	**Average**	56	**Number of Samples**	21
Total sulphur (wt %)	**Range**	0.01-0.14	**Median**	0.03	**Average**	0.04	**Number of Samples**	13
Anomalies	None							
Hypothetical Source Region	Enriched mantle?							
Tectonic Setting	Marginal basin?							
Mineralization Type	Unknown							
Potential for exploration	1 (Calc-alkaline affinity, no PGE anomalies, very low PGE values)							

MISCELLANEOUS NOTES

The intrusion is characterized by very strong pervasive alteration of plagioclase to sericite, epidote and carbonate. A wide variety of olivine-bearing lithologies is present throughout the intrusion with local cumulate texture reasonably well preserved although original mineralogy is rarely preserved. Veinlet-controlled epidote and carbonate is common, as are the presence of zircons in biotite.

REFERENCES:

[1] Easton, R.M. and Ford, F.D. 1994. Geology of the Grimsthorpe area, Hastings and Lennox and Addington counties, Grenville Province: Ontario Geological Survey, Open File Report 5894, 153p. Accompanied by Preliminary Map P.3267, scale 1:20 000.
[2] Easton, R.M. 2001. Precambrian geology, Mazinaw area; Ontario Geological Survey, Preliminary Map P.3439, scale 1:50 000.

OTHER REFERENCES:

Freeman, E.B. 1979. Geological Highway Map, southern Ontario; Ontario Geological Survey, Map 2441, scale 1:800 000.
Hewitt, D.F. 1956. The Grenville Region of Ontario; *in* The Grenville Problem, Royal Society of Canada, Special Publication 1, p.22-41.
Hewitt, D.F. and Satterly, J. 1972. Haliburton-Bancroft area, Province of Ontario; Ontario Department of Mines, Map 1957B, scale 1:126 720.
Lumbers, S.B. 1969. Geology of Limerick and Tudor Townships, Hastings County, Ontario; Ontario Department of Mines, Geological Report 67, 110p. Accompanied by Maps 2167 and 2168, scale 1:31 680.
Meen, V.B. 1944. Geology of the Grimsthorpe-Barrie area, Hastings, Lennox and Addington, and Frontenac Counties, Ontario; Ontario Department of Mines, Annual Report 1942, v.51, pt. 4, p.1-50.

Intrusion Number	OTH-104				**Intrusion Name**	Killer Creek		
Township/Area	Grimsthorpe and Anglesea Townships				**Resident Geologist District**	Southeastern Ontario		
Location Description	7.2 km west of Cloyne, Grimsthorpe-Barrie area. NTS 31 C/14							
Property Name							**Access**	Road
Geological Setting	Grenville Province, Central Metasedimentary Belt, Elzevir Terrane.							
Intrusion Age/Era	Unknown, older than Elzevir Tonalite (1267 Ma)[1]							
Geophysical Surveys								
Recent mapping	OGS Map P.3267[1], P.3439[2]							
Morphology				**Strike**			**Dip**	
Size of Intrusion								
Lithologies Present	This study: metagabbro; hornblendite; pegmatitic gabbro; amphibolite. Literature: range from ultramafic to anorthositic.							
Stratigraphic Sequence								
Metamorphic grade								
Alteration	Generally unaltered, local replacement of hornblende by actinolite, presence of late biotite, sericite and carbonates.							
Structure-Texture	Igneous layering is common. Generally undeformed.			**Strike**	Lay. (CMV-029)154		**Dip**	80
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Intrudes mafic metavolcanic rocks and clastic metasedimentary rocks.							
Nature of contact					**Strike**		**Dip**	
Material analyzed	Grab sample			**Sample Distribution**	9 samples from midsection of the elongate body.			
Geochemical Characteristics: Please refer to figures 23, 24 and 25.								
Chemical affinity	Calc-alkaline							
Sulphide saturation	Saturated							
Pd/Pt ratios	**Range**	0.53-3.98	**Median**	1.10	**Average**	1.83	**Number of Samples**	5
Pt + Pd (ppb)	**Range**	0.6-7.6	**Median**	2.8	**Average**	3.6	**Number of Samples**	7
Ni/Cu ratios	**Range**	0.13-2.58	**Median**	0.28	**Average**	0.79	**Number of Samples**	8
Total Ni (ppm)	**Range**	10-243	**Median**	57	**Average**	87	**Number of Samples**	8
Total Cu (ppm)	**Range**	77-346	**Median**	105	**Average**	133	**Number of Samples**	8
Total sulphur (wt %)	**Range**	0.01-0.10	**Median**	0.01	**Average**	0.03	**Number of Samples**	6
Anomalies	Anomalous values (Pd=125ppb; Pt=67ppb) reported in Bon Echo Provincial Park.[1]							
Hypothetical Source Region	Metasomatized mantle							
Tectonic Setting	Possibly arc[1]							
Mineralization Type	Unknown							
Potential for exploration	1 (calc-alkaline affinity, very low PGE values, sulphide-saturated). Potential for Cr-V and possibly Ni-Cu.							

MISCELLANEOUS NOTES:

This study:
Some recrystallization of large plagioclase into small grains near the margin but not complete metamorphic recrystallization as could be expected for an older intrusion in the Grenville. Strong sericitization of the large plagioclase crystals but not of the small recrystallized ones. Biotite seems to be more associated with opaque minerals. Titanite coronas around opaques. Hornblende is locally recrystallized as small crystals from what was likely pyroxene. Texture is equigranular except for some leftover large plagioclase. Possibly some leftover cores of pyroxenes are also present. Actinolite locally replaces hornblende.

REFERENCES:

[1] Easton, R.M. and Ford, F.D. 1994. Geology of the Grimsthorpe area, Hastings and Lennox and Addington counties, Grenville Province; Ontario Geological Survey, Open File Report 5894, 153p. Accompanied by Preliminary Map P.3267, scale 1:20 000.
[2] Easton, R.M. 2001. Precambrian geology, Mazinaw area; Ontario Geological Survey, Preliminary Map P.3439, scale 1:50 000.

OTHER REFERENCES:

Easton, R.M. 1992. The Grenville province and the Proterozoic history of central and southern Ontario; *in* Geology of Ontario, Ontario Geological Survey, Special Volume 4, Part 2, p.714-904.
Easton, R.M. and Ford, F.D. 1991. Geology of the Mazinaw area; *in* Summary of Field Work and Other Activities, Ontario Geological Survey, Miscellaneous Paper 157, p.95-108.
Meen, V.B. 1944. Geology of the Grimsthorpe-Barrie area, Hastings, Lennox and Addington, and Frontenac counties, Ontario; Ontario Department of Mines, Annual Report 1942, v.51, pt. 4, p.1-50.

Intrusion Number	OTH-105	**Intrusion Name**	Mountain Grove
Township/Area	Olden Township	**Resident Geologist District**	Southeastern Ontario
Location Description	22.5 km NNW of Verona, 70 km N of Kingston, 45 km SW of Perth, Olden-Bedford area, Long Lake area. NTS 31 C/10		
Property Name		**Access**	Road
Geological Setting	Grenville Province, Central Metasedimentary Belt, Elzevir Terrane, Sharbot Lake domain.		
Intrusion Age/Era	Mesoproterozoic, part of the Frontenac plutonic suite; 1154±3 Ma[1,2]		
Geophysical Surveys			
Recent mapping	OGS Maps P.3442[3], 2449[4], 2053[5], 1947-5[6]		
Morphology	Two distinct intrusions: southern unit is subcircular to oblate, elongated in east-northeast direction, intruded by the Leggat Lake pluton to the east. Northern unit is oblate-shaped, elongated east-west.		
Size of Intrusion	Area of 25.0 sq. km with major/minor axes = 7 x 3.8 km.[7]		
Lithologies Present	This study: metagabbro, pegmatitic gabbro, quartz-gabbro olivine-gabbronorite, monzodiorite, metagabbronorite.		
Stratigraphic Sequence			
Metamorphic grade	Northern unit, amphibolite facies. Southern unit, uncertain, possibly unmetamorphosed.		
Alteration	Sericitization and epidote alterations are locally strong. Local replacement of plagioclase by scapolite.		
Structure-Texture	Some more mafic samples still have recognizable cumulate texture, which has been overprinted by metamorphic recrystallization in various other samples. Presence of myrmekite is common. Generally undeformed.		
Magma Dynamics			
Characteristic Mineralogy	Olivine-bearing units not previously reported. Local presence of scapolite.		
Crystallization Sequence			
Host rock	Intrudes amphibolite schists, siliceous schist and marble.[1]		
Nature of contact	Intrusive	**Strike**	**Dip**
Material analyzed	Grab sample	**Sample Distribution**	15 samples from southern edge and along a N-S transect towards the eastern edge of intrusion.

Geochemical Characteristics: Please refer to figures 23, 24 and 25.

Chemical affinity	Alkalic							
Sulphide saturation	No data							
Pd/Pt ratios	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Pt + Pd (ppb)	**Range**	0.7	**Median**	0.7	**Average**	0.7	**Number of Samples**	1
Ni/Cu ratios	**Range**	0.94-49.33	**Median**	1.64	**Average**	5.93	**Number of Samples**	15
Total Ni (ppm)	**Range**	7-203	**Median**	51	**Average**	66	**Number of Samples**	15
Total Cu (ppm)	**Range**	3-84	**Median**	21	**Average**	25	**Number of Samples**	15
Total sulphur (wt %)	**Range**	0.02-0.49	**Median**	0.15	**Average**	0.17	**Number of Samples**	15

Anomalies	None in this study. Several Ni-Cu-Co occurrences through the intrusion previously reported.[4]
Hypothetical Source Region	Metasomatized mantle
Tectonic Setting	Southern unit, continental arc?
Mineralization Type	Southern unit, unknown
Potential for exploration	2 (very low PGE values and S-saturated but is likely alkalic and has a large proportion of mafic rocks, including olivine-bearing units)

REFERENCES:

[1] Davidson, A. 2000. Geology of the Mountain Grove pluton, Central Metasedimentary Belt, Grenville Province, Ontario; Geological Survey of Canada, Current Research 2000-C23, 7p.

[2] Davidson, A. and van Breemen, O. 2000. Age and extent of the Frontenac plutonic suite in the Central Metasedimentary Belt, Grenville Province, southeastern Ontario; Geological Survey of Canada, Radiogenic age and isotopic studies: Report 13, Current Research 2000-F4, 15p.

[3] Easton, R.M. 2001. Precambrian geology, Tichborne area; Ontario Geological Survey, Preliminary Map P.3442, scale 1:50 000.

[4] Wolff, J.M. 1982. Geology of the Long Lake area, Lennox and Addington and Frontenac counties; Ontario Geological Survey, Report 216, 76p. Accompanied by Map 2449, scale 1:31 680.

[5] Hewitt, D.F. 1964. Madoc area, Ontario; Ontario Division of Mines, Map 2053, scale 1:126 720.

[6] Harding, W.D. 1947. Olden-Bedford area, County of Frontenac, Ontario; Ontario Division of Mines, Map 1947-05, scale 1:63 360.

[7] Wilson, G.C. 1994. Mafic-ultramafic intrusions, base-metal sulphides, and platinum group element potential of the Grenville province in southeastern Ontario; Ontario Geological Survey, Open File Report 5880, 196p.

OTHER REFERENCES:

Wolff, J.M. 1979. Geology of the Long Lake area, Frontenac County; Ontario Geological Survey, Open File Report 5271, 174p.

Intrusion Number	OTH-106	**Intrusion Name**	Lavant		
Township/Area	Darling, Lavant, Sherbrooke, Lanark, Dalhousie townships	**Resident Geologist District**	Southeastern Ontario		
Location Description	The Lavant gabbroic complex is located about 110 km southwest of the City of Ottawa, northwest and west of Perth, north of Highway 7. The southern tip is located between Clarendon Station and Silver Lake, north of Highway 7, and the north end is east of Flower Station, crossed by Highway 511 between Lanark and Calabogie[1]. NTS 31 F/2 and 31 C/15				
Property Name		**Access**	Road		
Geological Setting	Grenville Province, Central Metasedimentary belt, Sharbot Lake domain. Gabbro, diorite and quartz-diorite form part of a plutonic body that is largely bound on the west by the major discontinuity of the Roberston Lake shear zone. Rocks along this structure are frequently intensely altered. The complex is massive except at the margins where igneous layering is locally present. It may consist of several coalesced intrusive bodies, based on the distribution of country rock screens.				
Intrusion Age/Era	Mesoproterozoic, 1224±3 Ma[1]				
Geophysical Surveys	GSC Map 68G[2]				
Recent mapping	OGS Maps 1956-4[3], 2512[4], 2515[5], P.3113[6], P.3438[7], P.3440[8]				
Morphology	Elongated, may consist of several discrete intrusive centers.	**Strike**		**Dip**	
Size of Intrusion	Estimated area 249 sq. km, with major/minor axes = 40 x 10 km.				
Lithologies Present	This study: metagabbro, hornblendite, pegmatitic gabbro, gabbro, orthopyroxene-gabbro, granodiorite, leucogabbro, gabbronorite.				
Stratigraphic Sequence					
Metamorphic grade	Hypersthene was observed in a granoblastic-textured gabbro in this study. Pumpellyite and chlorite replacing biotite is also reported[4] (retrometamorphism?).				
Alteration	Strong sericite and/or chlorite and/or epidote alteration is common				
Structure-Texture	Cumulate texture and magmatic layering are still observable locally but a large part of the intrusion is recrystallized, showing more of a granoblastic texture. Generally undeformed.	**Strike**	Lay. 01-ERD-005: 060 Lay. 01-ERD-010: 111	**Dip**	38 69
Magma Dynamics					
Characteristic Mineralogy					
Crystallization Sequence					
Host rock	The country rocks include mafic metavolcanic rocks and banded marble with phlogopite and graphite[9].				
Nature of contact		**Strike**		**Dip**	
Material analyzed	Grab samples	**Sample Distribution**	20 samples from mostly the middle of the elongate structure, north of the E-W mid-line.		

Geochemical Characteristics: Please refer to figures 23, 24 and 25.

Chemical affinity	Calc-alkaline							
Sulphide saturation	Probably saturated							
Pd/Pt ratios	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Pt + Pd (ppb)	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Ni/Cu ratios	**Range**	0.17-6.67	**Median**	0.77	**Average**	1.34	**Number of Samples**	16
Total Ni (ppm)	**Range**	2-233	**Median**	39	**Average**	57	**Number of Samples**	16
Total Cu (ppm)	**Range**	2-364	**Median**	40	**Average**	53	**Number of Samples**	19
Total sulphur (wt %)	**Range**	0.01-1.78	**Median**	0.07	**Average**	0.16	**Number of Samples**	18

Anomalies	None for PGE. Magnetite was mined in the area. It occurs in metagabbro with local anorthositic facies. Quartz in the rock is strained. Lesser amounts of pyrrhotite, partly altered to marcasite with minor ilmenite and chalcopyrite. Host rock is described as leucocratic and varitextured[9].
Hypothetical Source Region	
Tectonic Setting	Back-arc or rifted back-arc
Mineralization Type	Unknown
Potential for exploration	1 (extremely low PGE values, calc-alkaline and fractionated intrusion)

MISCELLANEOUS NOTES:

The Clarendon-Dalhousie map area is centered approximately 104 km southwest of Ottawa and 88 km north of Kingston. In northwest Dalhousie and southeast Lavant Townships, diorite and gabbro form part of a narrow oval-shaped plutonic complex that extends 40 km from Oso Township and northeastward to Darling Township. Similar rocks occur within 1.5 km south of the town of Plevna in Clarendon Township and also just north of Deadbeaver Creek in the southwest part of South Canonto Township. A considerable complexity of rock types ranging from gabbro to granite and pegmatite occur in each of these areas.

Medium- to coarse-grained diorite or gabbro is the most abundant rock type west of Joe Lake in Lavant Township and in Dalhousie Township, less than 3 km from the west margin of the plutonic complex. Fine-grained diorite outcrops between Dalhousie Lake and the town of Poland and is difficult to distinguish from biotite and hornblende schist. However, the schists tend to be darker and are markedly schistose whereas, the coarse- or fine-grained diorite tends to be massive in handsample. Coarse- and fine-grained diorite and gabbro are brecciated by intrusion of narrow irregular dikes that range in composition from quartz diorite to granite pegmatite. In many areas of the complex, several different rock types occur in the same outcrop. The field relationships between the fine-grained and coarse-grained diorite are unknown. Fine-grained diorite may be present as inclusions or xenoliths in the coarse-grained diorite but more commonly the fine-grained variety seems to intrude the coarse-grained variety. Crushing and recrystallization may have produced some of the fine-grained phases, but certainly in some places it appears that the coarse-grained diorite is autointruded by a finer-grained phase. Nearly all dikelet rocks except the granite pegmatite are distinctly foliated.

REFERENCES:

[1] Corfu, F. and Easton, R.M. 1997. Sharbot Lake terrane and its relationships to Frontenac terrane, Central Metasedimentary Belt, Grenville Province: new insights from U-Pb geochronology; Canadian Journal of Earth Sciences, v.34, p.1239-1257.

[2] Geological Survey of Canada 1952. Clyde, Renfrew, Frontenac and Lanark Counties; Aeromagnetic Map 68G, scale 1:63 360.

[3] Peach, P.A. and Smith, B.L. 1956. Clarendon-Dalhousie-Darling area, counties of Frontenac and Lanark; Ontario Geological Survey, Map 1956-04, scale 1:63 360.

[4] Pauk, L. 1989. Geology of the Dalhousie Lake area, Frontenac and Lanark counties; Ontario Geological Survey, Report 245, 57p. Accompanied by Map 2512, scale 1:31 680.

[5] Pauk, L. 1989. Geology of the Lavant area, Frontenac and Lanark counties; Ontario Geological Survey, Report 253, 61p. Accompanied by Map 2515, scale 1:31 680.

[6] Easton, R.M. 1988. Geology of the Darling area, Lanark and Renfrew counties; Ontario Geological Survey, Open File Report 5693, 206p. Accompanied by Preliminary Map P.3113, scale 1:15 840.

[7] Easton, R.M. 2001. Precambrian geology, Clyde Forks area; Ontario Geological Survey, Preliminary Map P.3438, scale 1:50 000.

[8] Easton, R.M. 2001. Precambrian geology, Sharbot Lake area; Ontario Geological Survey, Preliminary Map P.3440, scale 1:50 000.

[9] Wilson, G.C. 1994. Mafic-ultramafic intrusions, base-metal sulphides, and platinum group element potential of the Grenville province in southeastern Ontario; Ontario Geological Survey, Open File Report 5880, 196p.

OTHER REFERENCES:

Pauk, L. 1984. Geology of the Lavant area, Lanark and Frontenac counties; Ontario Geological Survey, Open File Report 5519, 129p. Accompanied by Preliminary Map P.2610, scale 1:15 840.

Pauk, L. 1984. Geology of the Dalhousie Lake area, Frontenac and Lanark counties; Ontario Geological Survey, Open File Report 5517, 116p. Accompanied by Preliminary Map P.2533, scale 1:15 840.

Intrusion Number	OXH-107		**Intrusion Name**	Wolfe Lake Gabbro				
Township/Area	North Crosby Township		**Resident Geologist District**	Southeastern Ontario				
Location Description	5.3 km NNW of Westport. Westport map area is approximately 48 km northeast of Kingston and 112 km southwest of Ottawa. NTS 31 C/9							
Property Name							**Access**	Road, trail
Geological Setting	Grenville Province, Central Metasedimentary Belt, Frontenac terrane.							
Intrusion Age/Era	Mesoproterozoic. Frontenac intrusive suite, ~1153 Ma.[1]							
Geophysical Surveys								
Recent mapping	GSC Map 1182A[2]							
Morphology	Prism shape with apex pointing south.							
Size of Intrusion								
Lithologies Present	This study: gabbro and metagabbro.							
Stratigraphic Sequence								
Metamorphic grade	Country rocks are low- to medium-pressure granulite facies (presence of hypersthene).							
Alteration	Some sericitization of plagioclase and local replacement by scapolite.							
Structure-Texture	Cumulate textures locally preserved but mostly granoblastic. Generally undeformed.			**Strike**			**Dip**	
Magma Dynamics								
Characteristic Mineralogy								
Crystallization Sequence								
Host rock	Intrudes pyroxene-gneiss and quartz-biotite-paragneiss.							
Nature of contact	Intrusive				**Strike**		**Dip**	
Material analyzed	Grab samples		**Sample Distribution**	9 samples taken from the southern portion of intrusion.				
Geochemical Characteristics: Please refer to figures 23, 24 and 25.								
Chemical affinity	Alkalic							
Sulphide saturation	No data							
Pd/Pt ratios	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Pt + Pd (ppb)	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Ni/Cu ratios	**Range**	0.42-6.50	**Median**	1.10	**Average**	2.15	**Number of Samples**	9
Total Ni (ppm)	**Range**	5-44	**Median**	26	**Average**	23	**Number of Samples**	9
Total Cu (ppm)	**Range**	6-31	**Median**	12	**Average**	14	**Number of Samples**	9
Total sulphur (wt %)	**Range**	0.01-0.49	**Median**	0.19	**Average**	0.23	**Number of Samples**	9
Anomalies	None							
Hypothetical Source Region	Metasomatized mantle							
Tectonic Setting	Continental arc?							
Mineralization Type	Unknown							
Potential for exploration	1 (Alkalic affinity, small intrusion, low PGE values, no known PGE occurrences)							

MISCELLANEOUS NOTES:

The Westport map area is centred approximately 48 km northeast of Kingston and 112 km southwest of Ottawa. Numerous intrusions of diorite and gabbro occur throughout the map area and are usually associated with coarse-grained granitic rocks. Diorite masses are present south of Clear Lake, on Scott Island in Newboro Lake, just east of Lake Opinicon, and within the Lyndhurst quartz-monzonite pluton. Quartz-diorite occurs in the area between Red Horse and Charleston Lakes. In general, the diorite is fine- to coarse-grained, massive and granular textured. The quartz-diorite is dark grey, generally equigranular, but pegmatitic patches of mafic minerals are common.[2]

The roughly triangular north trending Wolf Lake gabbro extends 6.4 km north of the east end of Wolfe Lake. The boundaries of this intrusion are gradual from gabbro to monzonite. Numerous irregular intersecting dikes of monzonite are also present at the boundaries. On the north and west margins, the gabbro is in contact with partly mylonitized biotite and pyroxene gneisses. The gabbro is uniform in appearance and composition but frequently contains fine-grained biotitic phases and dikes and ill-defined inclusions of fine- to medium-grained dioritic rocks containing green hornblende. Typically, the gabbro is medium- to coarse-grained and contains about 60% brown to lilac colored grains of andesine. The gabbro is deeply weathered to coarse feldspathic rubble in the upper part in most outcrops. A characteristic red-brown soil underlies the rubble. Mineralogically, this intrusion is similar to the gabbro north of Newboro Lake except for the fact that the feldspar and pyroxene are more altered and biotite is abundant in the mafic varieties. Variations in grain size and mineral content occur on a small scale and the texture is irregular. The mafic phases are segregated into knots and larger masses. As well, gabbro varieties present contain numerous grains of fine mesoperthite similar to that within the gneisses. The potassium feldspar is monoclinic and untwinned. Small amounts of quartz are common in the gabbro and sphene occurs in a few places.[2]

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[2] Wynne-Edwards, H.R. 1967. Geology, Westport, Ontario; Geological Survey of Canada, Map 1182A, scale 1:63 360.

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Intrusion Number	OTH 108	**Intrusion Name**	Donaldson Bay
Township/Area	[illegible]	**Resident Geologist District**	Southeastern Ontario
Location Description	NTS 31 C/9		
Property Name		**Access**	Road
Geological Setting	Grenville Province, Central Metasedimentary Belt, Frontenac terrane.		
Intrusion Age/Era	Mesoproterozoic, part of Frontenac intrusive suite, ~1180 Ma[1]		
Geophysical Surveys			
Recent mapping	GSC Map 1182A[2]		
Morphology	Cigar-shaped elongated N-S body.		
Size of Intrusion	7.5 km in length with a maximum width of 750 m.		
Lithologies Present	This study: tonalite and granodiorite. Literature: mainly quartz-diorite.		
Stratigraphic Sequence			
Metamorphic grade	Country rocks are low- to medium-pressure granulite facies. Intrusion may be metamorphosed to similar grades, given its older age.		
Alteration	Minor sericitization and local carbonatization.		
Structure-Texture	Undeformed to weakly foliated, equigranular.		
Magma Dynamics			
Characteristic Mineralogy	Tonalite		
Crystallization Sequence			
Host rock	Intrudes quartzite and siliceous limestone, calc-silicate rocks and granulite gneiss.		
Nature of contact			
Material analyzed	Grab sample	**Sample Distribution**	10 samples taken along the eastern edge south of the E-W midline of the intrusion.

Geochemical Characteristics: Please refer to figures 23, 24 and 25.

Chemical affinity	Calc-alkaline							
Sulphide saturation	No data							
Pd/Pt ratios	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Pt + Pd (ppb)	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Ni/Cu ratios	**Range**	1.50-2.68	**Median**	2.09	**Average**	2.09	**Number of Samples**	2
Total Ni (ppm)	**Range**	2-83	**Median**	6	**Average**	24	**Number of Samples**	4
Total Cu (ppm)	**Range**	2-31	**Median**	5	**Average**	8	**Number of Samples**	7
Total sulphur (wt %)	**Range**	0.01-0.07	**Median**	0.01	**Average**	0.02	**Number of Samples**	9

Anomalies	None
Hypothetical Source Region	Crustal signature from trace elements
Tectonic Setting	Continental arc?
Mineralization Type	Unknown
Potential for exploration	1 (intermediate to felsic in composition, no PGE anomaly, PGE values are below detection limits).

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[2] Wynne-Edwards, H.R. 1967. Geology, Westport, Ontario; Geological Survey of Canada, Map 1182A, scale 1:63 360.

Intrusion Number	OTIS 109	**Intrusion Name**	Leo Lake
Township/Area	Storrington Township	**Resident Geologist District**	Southeastern Ontario

Location Description	Approximately 10 km NW of Gananoque¹, north of the 401 highway; straddles Leeds and Frontenac Counties. NTS 31 C/8		
Property Name		**Access**	Road, boat
Geological Setting	Grenville Province, Central Metasedimentary Belt, Frontenac terrane.		
Intrusion Age/Era	Mesoproterozoic, part of the Frontenac intrusive suite. Ar⁴⁰-Ar³⁹ plateau hornblende age of 1154±6 Ma from skarn adjacent to the body provides an approximate age².		
Geophysical Surveys			
Recent mapping	GSC Map 27-1962¹		
Morphology	Irregular donut-shaped.		
Size of Intrusion	3 miles at its widest.		
Lithologies Present	This study: metagabbro, gabbronorite, olivine-gabbronorite and gabbro. Literature: Donut-shaped intrusion composed of gabbro; the center of the donut is composed of coarse-grained massive, leucocratic, pink to brownish grey monzonite, syenite, quartz monzonite, granodiorite and syenodiorite, and pyroxene granulite¹.		
Stratigraphic Sequence			
Metamorphic grade	Country rocks are low- to medium-pressure granulite facies, intrusion may be unmetamorphosed.		
Alteration	This study: pervasive sericitization with possible potassic alteration. Literature: Gabbro composed of altered pyroxene and the gabbro is weathered in outcrop¹.		
Structure-Texture	Good cumulate texture locally preserved. Generally, no fabric generating structures are present but some thin sections appear to show protocataclastic grain boundaries.	**Strike**	
		Dip	
Magma Dynamics			
Characteristic Mineralogy			
Crystallization Sequence			
Host rock	Intrudes quartzite, crystalline limestone, biotite gneiss.		
Nature of contact		**Strike**	
		Dip	
Material analyzed	Grab samples	**Sample Distribution**	9 samples from southwest to southeast curve of the donut shape.

Geochemical Characteristics: Please refer to figures 23, 24 and 25.

Chemical affinity	Unclear from geochemical data from this study. Could be alkalic from association with syenitic rocks reported by previous studies.							
Sulphide saturation	No data							
Pd/Pt ratios	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Pt + Pd (ppb)	**Range**	-	**Median**	-	**Average**	-	**Number of Samples**	0
Ni/Cu ratios	**Range**	0.95-12.00	**Median**	1.88	**Average**	3.00	**Number of Samples**	9
Total Ni (ppm)	**Range**	6-156	**Median**	15	**Average**	32	**Number of Samples**	9
Total Cu (ppm)	**Range**	3-41	**Median**	9	**Average**	11	**Number of Samples**	9
Total sulphur (wt %)	**Range**	0.04-0.53	**Median**	0.14	**Average**	0.20	**Number of Samples**	9

Anomalies	None
Hypothetical Source Region	Enriched mantle?
Tectonic Setting	Continental arc?
Mineralization Type	Unknown
Potential for exploration	1 (Very low PGE, values are below detection limits, small intrusion)

MISCELLANEOUS NOTES:

The Leo Lake intrusion has an irregular doughnut shape in map view. It is 3 miles at widest point. The intrusion is composed of gabbro, with a center containing pyroxene granulite, monzonite, syenite and granodiorite. The gabbro grades into syenite, and both are cut by quartz-perthite-tourmaline dykelets and by diabase.¹ With no significant mineral deposits³, the Frontenac terrane is characterized by granulite facies metamorphic conditions and paragneiss, quartzofeldspathic gneiss, calcite and dolomite marbles and metaquartzite (no volcanic rocks are present).

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Metric Conversion Table

Conversion from SI to Imperial			Conversion from Imperial to SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
			LENGTH		
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
			AREA		
1 cm^2	0.155 0	square inches	1 square inch	**6.451 6**	cm^2
1 m^2	10.763 9	square feet	1 square foot	**0.092 903 04**	m^2
1 km^2	0.386 10	square miles	1 square mile	2.589 988	km^2
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
			VOLUME		
1 cm^3	0.061 023	cubic inches	1 cubic inch	**16.387 064**	cm^3
1 m^3	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m^3
1 m^3	1.307 951	cubic yards	1 cubic yard	0.764 554 86	m^3
			CAPACITY		
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
			MASS		
1 g	0.035 273 962	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 747	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 622 6	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311 3	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 90**	t
			CONCENTRATION		
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

	Multiplied by	
1 ounce (troy) per ton (short)	31.103 477	grams per ton (short)
1 gram per ton (short)	0.032 151	ounces (troy) per ton (short)
1 ounce (troy) per ton (short)	20.0	pennyweights per ton (short)
1 pennyweight per ton (short)	0.05	ounces (troy) per ton (short)

Note: Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries, published by the Mining Association of Canada in co-operation with the Coal Association of Canada.

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